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THE
GLASGOW MEDICAL JOURNAL.

EDITED BY

THOMAS KIRKPATRICK MONRO, M.D.,

AND

GEORGE HENRY EDINGTON, M.D.,

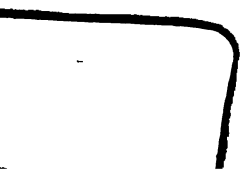
FOR THE

Glasgow and West of Scotland Medical Association.

JULY TO DECEMBER, 1902.

VOL. LVIII.

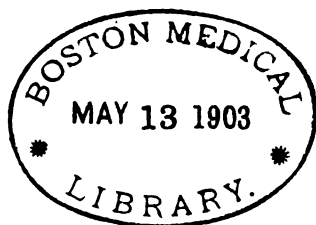
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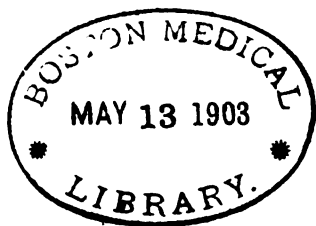




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7112



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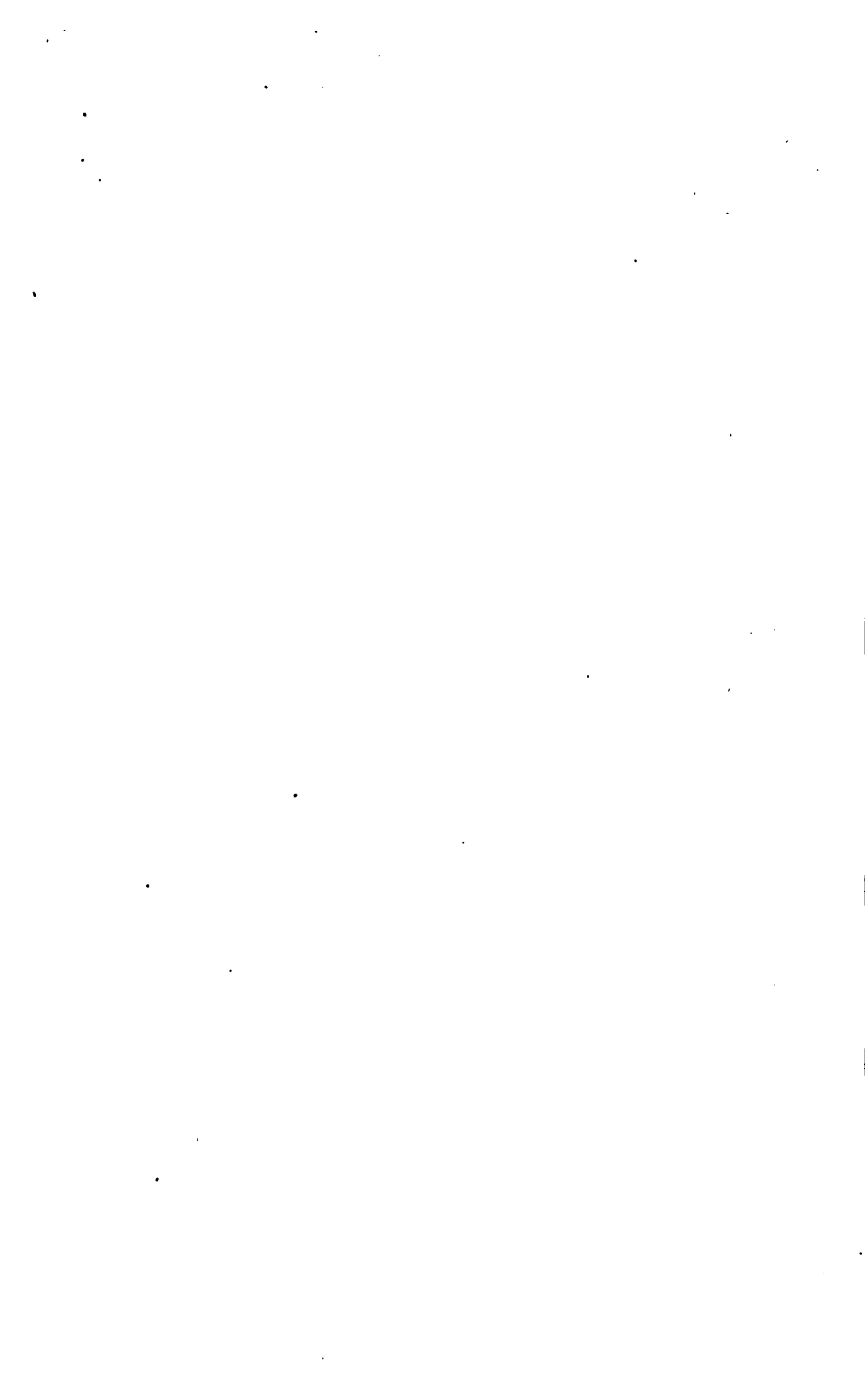
CHRONIC SUPPURATIVE DISEASE OF THE
MIDDLE EAR.

By JAMES KERR LOVE, M.D.,
Aural Surgeon to Glasgow Royal Infirmary.

DURING the past ten years I have treated about three thousand cases of this disease, and have performed the mastoid operation in nearly three hundred cases. The tabulation or classification of these cases would be difficult, and the conclusions would not be satisfactory, for the majority occurred amongst the poor patients at the Royal Infirmary Ear Dispensary, and in these the home treatment is often badly carried out, and the patient often disappears before the case is finished.

Then, I hesitate to apply to sets of cases of this disease the words "cured," "improved," &c., without presenting at the same time the whole picture of each case, and allowing a sufficient time to elapse before stating anything positive about its cure. Lately I had to re-open a mastoid process and empty it of a large quantity of cheesy pus after an interval of ten years, the original operation having been done by a very able surgeon, and, so far as the bone was concerned, having been thoroughly done.

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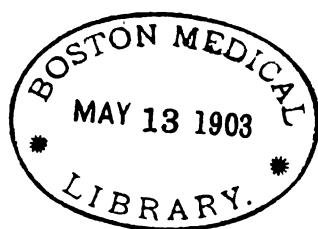
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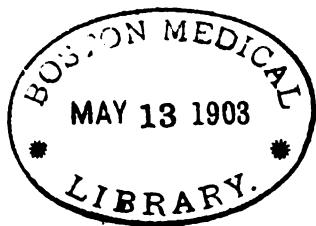
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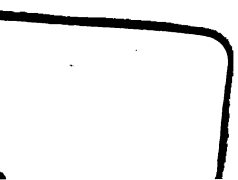
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middle ear. It may be removed, but will recur unless something be done to remove its cause in the middle ear, the tympanic attic, or the mastoid continuation of the middle ear.

Let us now assume that there is a clear view of the tympanic membrane, or, rather, of the inner end of the external auditory canal. An apparently intact membrane may be found, but that is not the rule. If the membrane be apparently intact, the perforation may be so small as to be found out with difficulty, and then it most likely exists high up in or near Shrapnel's membrane, and leads to a diseased ossicle.

In these ossicular cases there is usually very little discharge. Sometimes a layer of pus simulates in lustre, colour, and curve the normal tympanic membrane, so if the examiner has any doubt whatever about the appearances, he should touch the surface with a cotton tip, when, of course, the pus will be removed and the deception exposed. Notice the odour of the discharge. If there is much discharge at all, it is better to use the syringe at this early stage of the examination. This will remove most of the discharge. In old cases of middle ear suppuration, however, especially those which have been only occasionally cleaned out, or not cleaned out at all, the discharge may consist of tough flakes and membranous patches. For the removal of this there is nothing so good as peroxide of hydrogen (3-5 vol.), followed by careful wiping and drying with cotton tips.

Such thorough cleansing having been done, the position and size of any perforation is to be made out, the presence and point of attachment of any granulation mass, and the condition of the ossicles noted. Often there is little membrane left. The shape of a perforation is not of much consequence; its size and position are of first importance. If it is so small, or if for any other reason it cannot be seen, there are two other ways of testing its presence. The fluid from the syringe may pass into the throat and be tasted by the patient. Auto-inflation of the drum cavity by Valsalva's method may cause bubbles to escape into the middle ear and through a small chink into the membrane, where they may be seen by the eye of the examiner, or Politzerisation may send a current of air through a small perforation, and the hiss of the current may be distinctly heard by the surgeon. Further, after such inflation by either method, fresh pus may be found at the inner end of a previously dried external auditory canal, and give proof of the presence of a perforation.

Having found the perforation, a probe should be passed through it. I have no hesitation about using a probe freely

in the middle ear. Under a good light no harm can be done, and why this sinus should not have applied to it the valuable test of probing I cannot see, although some aural surgeons hedge the proceeding about with many conditions and precautions. If I were shut up to the use of one instrument in examining a case of chronic middle ear suppuration, I should lay down the mirror and speculum and take up the probe. But I am not advocating the use of one instrument. Under a good light, and with as large a speculum as the canal will admit, let the probe be used thoroughly. Use it with a straight point—with a curved point—but never with a sharp point. Practically, the only structure you can injure is an exposed facial nerve, and a blunt-pointed probe will not injure the nerve. The attachment of every granulation mass should be tested, the ossicles should be tested, the curved tip should be turned upwards into the attic, upwards and backwards into the aditus ad antrum and downwards into the recess which has been aptly called the "cellar of the tympanum." It is from these two first points that granulations generally spring, and at which polypi find their attachment, and here, in most cases of chronic middle ear suppuration, the probe hitches against unhealthy bone.

Well, the diagnosis has proceeded thus far. The case is one of chronic suppurative disease of the middle ear. A part of the tympanic membrane is destroyed, say the lower half. Some or all of the ossicles are still in the grip of the remaining upper part of the membrane, and have been pulled almost out of sight into the tympanic attic, and the probe has demonstrated the presence of the diseased bone either in an ossicle, in the internal tympanic wall, in the roof of the attic, or upwards and backwards towards the aditus ad antrum. Can anything more be made out? In particular, can the state of the mastoid antrum and cells be discovered? Remember, I am not speaking of cases of acute mastoiditis where a projecting auricle labels the case six yards off. I am discussing a disease without any prominent symptom whatever, and seeking to ascertain the state of a set of cavities which cannot be searched by any probe nor seen through any speculum. But quiescent and harmless as the disease may look, every case of it is a potential mastoiditis, a potential brain abscess, sinus thrombosis, or meningitis. Can we, therefore, know anything about the contents of the mastoid process? I think not much at this first examination. The results of treatment will soon give ground for an opinion, but the first examination, however thoroughly done, will

generally leave the state of the mastoid process in doubt. But there are two or three points regarding which enquiry should be made.

1. Is there pain on pressure over the mastoid process?

2. If any granulation masses exist, do they spring from the edges of the opening of the aditus into the middle ear, or from the border cells near the roof of the canal?

3. Is there any difference between the diseased ear and the sound ear when, what I shall call for shortness, mastoid auscultation is applied.

Let us notice, then, those points seriatim.

1. Of course, in an acute mastoiditis there is not only pain on pressure, but very often pain apart from pressure, and spreading in almost every direction over the head, face, and neck. But in these cases of latent mastoid abscess, pain which the patient has hitherto known nothing of may sometimes be elicited on pressure. When it is present, it is a valuable sign, either that the cells contain pus or at least that the bone forming the mastoid process is inflamed. But the absence of pain does not negative the disease of the mastoid process or its cells.

2. If there be bulging on the upper and posterior wall of the external wall of the canal, and if here a probe enter and impinge on diseased bone, the mastoid cells contain pus and are discharging *via* the border cells into the external auditory canal. If granulation masses found in the middle ear spring from the upper and posterior part of the cavity (opening of the aditus), the mastoid cells usually contain pus or granulation masses. This argument, as we shall see, applies with greater force if these granulation masses recur after their removal and subsequent careful treatment of the middle ear.

3. Mastoid auscultation is practised in the following way. An ordinary rubber tube, such as is used in making an otoscope, or such as forms part of a binaural stethoscope, is furnished at one end with an ear-piece to fit the ear of the surgeon, and at the other with a small metal or vulcanite terminal shaped like an aural speculum. This latter is placed over the suspected antrum on the mastoid process, and, while the surgeon listens, a tuning-fork is sounded on the top of the head or on the bridge of the nose of the patient. A pus-filled antrum is supposed to modify the sound which passes through it, so that it differs from that arriving at the surgeon's ear through an air-filled antrum, and thus gives evidence of diagnostic value. Two such tubes may be used at once if

the surgeon can trust his ears to be alike, or one tube may be used and alternately placed on the two mastoid processes of the patient.

Now, I am sorry to say that, although a study of the physical conditions present would lead one to expect definite and accurate information from this method, in practice it is not often of value. I took a series of skulls and excavated the mastoid process on one side, leaving the other intact. Into the excavated mastoid I then into one skull ran molten lead, into another some marmalade, and, into a third, I put some cotton-wool. I need not, in a general paper like this, go into the details of the observations made, but I may state that they are not definite enough nor uniform enough to make me expect much of mastoid auscultation as a means of diagnosis. On the other hand, in a case of Bezold's mastoiditis on which I operated lately, a definite result was obtained. In this disease, the mastoid cells are diseased down to the tip of the process, and abscesses are present amongst the muscular planes on the side of the neck. Now, in the case in point, resonance was decidedly greater at the tip of the affected mastoid, but not increased over the antrum, and the operation showed the antrum to contain little or nothing, whilst the cells towards the tip were filled with inflammatory exudation (rarefying osteitis). I have no doubt that extended application of this test will define its position and value, but in the meantime it should be used only as an auxiliary, and I can hardly see that in any case it will be of such importance as to enable the surgeon to decide on a line of treatment without the most careful consideration of the other facts of the case. The mastoid antrum may be so small and the other cells so few that, though they be so hopelessly diseased as to render operation necessary, no auscultatory difference can be detected; and it is probable that the skull, which may be called the sounding-board in the experiment, is so large with regard to the cavities of an ordinary mastoid process (the resonating chamber in the experiment) that uniformly reliable results cannot be counted on.

(To be continued.)

SPINA BIFIDA: ITS OPERATIVE TREATMENT
AMONGST OUT-PATIENTS.¹

By JAS. H. NICOLL, M.B.,
Assistant Surgeon, Western Infirmary.

1. Gavin M., patient of Dr. Fotheringham, of Motherwell, brought to the Glasgow Children's Hospital, at the age of 2 months, on 2nd August last. Fig. 1 is a reproduction of a photograph taken on that date. The spina bifida appeared to be a pure meningocele, and the child was otherwise healthy.



FIG. 1.

Gavin M., æt. 2 months.

On 6th August, four days later, the tumour was excised in the out-patient clinic, and the child thereafter sent home in the care of its mother. The tumour proved to be a pure meningocele.

Convalescence was uneventful. The child was nursed throughout by its mother, aided by an aunt, and instructed

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 17th January, 1902.

by the surgical sister, who visited the patient daily, dressed the wound on the one occasion on which it was thought advisable, and removed the skin sutures on the eighth day.

The child, now nearly 8 months old, is in perfect health, and was shown to the Society. Fig. 2 is a photograph taken a month previously—i.e., four and a half months after operation.



FIG. 2.

Gavin M., wt. 6½ months, and four and a half months after operation.

2. Baby B., patient of Dr. Wm. Ross, Glasgow, brought to the Children's Hospital, at the age of 3 weeks, on 17th November last. Fig. 3 (p. 14) is the reproduction of a photograph taken on that date.

The case differed in certain features from the foregoing, and, in demonstrating it to the students, attention was drawn

to two points—(a) Dimpling of the skin and walls of the sac (partly shown in the photograph), associated with the presence of solid contents amongst the fluid (detected by palpation and by transmitted light): (b) a considerable degree of paraplegia (evidenced by blueness of feet and legs, absence of voluntary movements of lower limbs, and the repeated development of spasticity on the attempt to excite reflex movements).

On 23rd November, a week later, the tumour was excised



FIG. 3.

Baby B., *æ*t. 3 weeks.

in the out-patient clinique, and the child thereafter sent home in the care of its mother. On opening the sac during the operation there were found four nerve cords coursing over its wall, three on one side and one on the other. Attached to these cords were a number of whitish tumours, ranging in size from that of a pin-head to that of a large pea. The nerve cords were dissected from the sac wall, when it was found impossible, for lack of space, to replace the attached

tumours in the spinal canal. The largest of the tumours were, therefore, detached from the cords and removed, while the cords were placed in the spinal canal. The musculo-fascial flaps were made specially large, and carefully sutured over the neck of the excised sac, closing it in, and forming a posterior wall for the patent spinal canal.

Convalescence, except for transient carboloria, was uneventful. The child was nursed throughout by its mother and grandmother, instructed by the surgical sister, who visited



FIG. 4.

Baby B., æt. 2½ months, and six weeks after operation.

the patient daily, changed the dressings when necessary, and removed the skin sutures on the sixteenth day. The child is now, some two months after the operation, in good health, and was shown to the Society. Fig. 4 is the reproduction of a photograph taken six weeks after operation.

The flaps have formed a firm closure of the gap in the posterior wall of the spinal canal. A marked improvement has taken place in the condition of the lower limbs. Lividity has disappeared, spasticity has all but entirely subsided, and

voluntary movements have partially established themselves and are becoming gradually more perfect.

Fig. 5 is the reproduction of a photograph of the excised sac. It is shrivelled and its margins in-curved by the action of preservatives. On the portion of its interior exposed, however, are visible several ragged surfaces left after separation of the nerve cords and tumours. Beside the sac lie three of the largest of these tumours, which histological examination has proved to be of the nature suggested by the naked-eye characters. Dr. Leslie Buchanan, of the West of Scotland



FIG. 5.

Excised spina bifida sac and plexiform neuromata from its interior (case of Baby B.)

Clinical Research Laboratory, has made sections of one of the tumours, and reports it to be a "false (plexiform) neuroma."

In the *British Medical Journal* of 15th October, 1898, will be found a paper on the "Operative Treatment of Spina Bifida," based on an experience of over thirty cases; and in the *Glasgow Hospital Reports*, vol. ii, 1899, was published a second paper, based on an experience of forty-six cases. To these papers reference may be made for an account of certain operative methods followed, and a statement of the conclusions arrived at.

Exception has been taken by more than one critic to the opinion expressed in these papers—viz., that excision of spina bifida tumours in suitable cases has a mortality little, if at all, higher than has the operation for the radical cure of inguinal hernia. That opinion I believe to be well founded.

The two cases detailed above were treated throughout as out-patients at the Children's Hospital, and, without at present submitting a statement of all cases of spina bifida treated by excision, or of all cases of spina bifida and hydrencephalocele treated as out-patients after excision, it may be well to submit here a statement of the cases of spina bifida which I have treated as out-patients after excision at the Glasgow Children's Hospital. These, I find, have numbered nine in all. One of the nine, however, was treated during the period in which I had made it a rule to attempt operative cure in all cases of spina bifida without exception. It was brought, aged 1 week, in January, 1898. Obviously very ill, with temperature 100.4° , the infant had a collapsed and sloughing spina bifida in the dorsal region, which was said to have ruptured during birth. This I at once resected under chloroform. The child died on the sixth day after operation, having developed an eruption which was pronounced by a medical man to be chicken-pox, but which it is possible may have been due to pyæmia or septicæmia. It is evident that this case, with its sloughing sac and developing septic meningitis, should not be placed with the others. Of the eight cases which were non-septic at the time of operation, six are at present alive and well. One (Janet B.) died as the result of operative preparations, and one (Helen H.) died of whooping-cough three years after operation. The accompanying table (p. 18) is the complete list.¹

Six of the cases were pure meningoceles. Of these, Case 2 was one of the largest spina bifida sacs I have seen. The parents were afraid to lift the child for fear of the sac "tearing away," and it was so extensive and thin that I felt constrained to remove it then and there, and did so.

Case 8 contained nerve-cords and neuromata, and is detailed above.

Case 4, which was a cervical sac, presented the peculiarity that the neck of the sac felt solid, and gentle pinching of the solid part produced smart jerking upward of the lower limbs

¹ Since the date of the meeting at which this table was submitted, two further cases (pure meningoceles) have been treated at the Children's Hospital as out-patients after excision. Both healed by first intention, and are at the present time (12th June) well.

after the manner of the wooden figure toy on pulling the string. At the operation the solid portion was found to be a geniculate bend of the spinal cord into the neck of the sac, to cover which specially large flaps had to be dissected up. The case was reported in the *Lancet* of 2nd March, 1901. For a time after operation the jerking of the legs could be excited at the observer's will, but of late the coverings have become more tough. The child has been late in walking, but is now, at the age of nearly 2 years, commencing to walk, apparently—though further observation will be necessary on this point—normally, and is otherwise well.

CASES OF EXCISION OF SPINA BIFIDA TREATED AS OUT-PATIENTS AFTER OPERATION AT THE GLASGOW CHILDREN'S HOSPITAL.

Name.	Date of Operation.	Age at Operation.	Result.	Present Condition.
1. Helen H.,	July 3, 1896.	3 months.	Primary healing.	Died of whooping cough in 1899.
2. Agnes M'I.,	Jan. 6, 1899.	2 weeks.	"	Healthy.
3. Janet B.,	Feb. 3, 1899.	3 "	Death on eighth day from carbolic acid poisoning, at which time wound had healed and sutures been removed.	"
4. David H.,	June 19, 1900.	7 "	Primary healing.	"
5. Mary M'G.,	Aug. 7, 1900.	5 months.	"	"
6. Frances S.,	Aug. 7, 1900.	2 "	"	"
7. Gavin M.,	Aug. 6, 1901.	2 "	"	"
8. Baby B.,	Nov. 23, 1901.	3 weeks.	" but carboloria for three days.	"

Case 3 died of gastro-enteritis produced, apparently, by absorption of carbolic acid. Carbolic acid poisoning has occurred in several of the cases of spina bitida I have seen, though in this one alone with fatal effect. The case is mentioned in the paper of 1899 (*Glasgow Hospital Reports*, vol. ii), and the following is the note there:—

"On the morning of the operation the child was found to be suffering from carbolic acid poisoning. Its urine was blackish-green when passed, and the child was markedly collapsed, and vomited frequently. In three cases I have seen similar symptoms follow the application of carbolic

dressings to spina bifida sacs prior to operation; and it seems not improbable that the very thin parietes, bathed on one side by serous fluid, offer conditions under which absorption from the outside may occur with great facility. On the two former occasions on which symptoms of carbolic poisoning were present, I deferred operation. On this occasion the child appeared so ill that I thought it better to proceed with the operation in the hope that the evacuation of the contents of the sac might lead to relief of the symptoms. Unfortunately, this did not occur. The symptoms persisted, and were aggravated by increase of the vomiting and diarrhœa, with evidence of acute gastro-intestinal irritation, accompanied by subnormal temperatures. The wound, in spite of the child's increasing weakness, healed before death occurred from exhaustion on the eighth day."

Since the date of the foregoing I have seen toxic effects of carbolic acid in several further cases. Indeed, Case 8 was an instance in point. The urine here was blackish-green for three days after operation. In this case no dressing was applied in preparation beforehand—the parts were washed with soap and water, cleansed with turpentine and spirit, and merely sponged with 1-40 carbolic lotion just prior to operation. The instruments used were in 1-60 carbolic lotion, and the dressing was cyanide gauze sparingly moistened with 1-40 carbolic lotion. The entire quantity of carbolic acid to be absorbed had been purposely reduced to a minimum, but proved sufficient to affect the urine.

While for a time it was my practice to resect all cases of spina bifida, latterly cases in which the sac is ruptured, or ulcerating badly, have been rejected, while cases in which the sac is so extensive and sessile as to render it impossible to obtain efficient closing flaps from its margins have been treated by injection. Such of these as have been injected at the Children's Hospital have been treated as out-patients. To obviate the risk of subsequent leakage in these cases, the cannula is introduced through the erector spinæ at least 1 inch from the margin of the flat sac.

In reviewing a somewhat extensive list of cases of spina bifida, hydrocephalus, and hydrancephalocoele treated by operation in hospital and private practice, I am conscious of a growing belief that infants of tender age operated on for these, and various other surgical affections, fare at least as well in the care of their mothers as in the wards of a hospital, however well-conducted and efficient in the treatment of older beings.

PUERPERAL ECLAMPSIA.

BY WALTER L. WATT, M.D., WINNIPEG.

ECLAMPSIA is the term applied to recurrent convulsive attacks occurring in pregnant or puerperal women, which are the manifestations of an intoxication arising as an indirect result of the pregnancy.

MORBID ANATOMY.

Post-mortem examinations reveal a series of more or less constant morbid conditions, none of which, however, can be regarded as primary in nature.

The *liver* is yellower than normal owing to commencing fatty degeneration. Small hæmorrhages are met with both beneath the capsule and in the liver substance, and also areas of necrosis round the portal spaces from which emboli may be carried into other organs.

Kidneys.—The commonest condition is the pregnancy kidney. Here there is a fatty degeneration of the epithelium, which permits the passage of albumen and interferes with the excretion of urine. Distributed round some of the convoluted tubes there are found minute areas of necrosis resembling those in the liver.

The *spleen* is enlarged, congested, and soft. Small areas of necrosis, as above mentioned, are found, and also minute hæmorrhages beneath the capsule and in the splenic substance.

The *brain* is sometimes hyperæmic, sometimes anæmic, somewhat cedematous, with flattening of the convolutions. Minute hæmorrhages in various parts are frequently found.

The *lungs* are cedematous, especially at their base. Sub-pleural ecchymoses are seen, and emboli are often found, which probably come from the liver.

ETIOLOGY.

The etiology of eclampsia is still shrouded in mystery. Only a few scattered facts, like the first rays of the morning sun, serve to accentuate the enveloping darkness of the manifold theories and hypotheses which still cloud the minds of the medical and scientific world. Without going into all their details, the purpose of this paper, I think, will be fulfilled by stating the generally accepted present status of this much-debated question. Eclampsia is considered to be due to the

retention of the normal urinary toxins in the blood, owing to a failure of function on the part of the kidneys—i.e., a urinæmia. We know that, coincident with the onset of premonitory symptoms of eclampsia, the urine is found to contain a diminished quantity of these substances, and that the total amount of urine passed is considerably diminished. Coincident with the recovery of the patient, the quantity of toxic substances in the urine is considerably increased, and also the total amount of urine passed. As a corollary to this, Fehling has proved that the urine in eclampsia is less toxic than in the normal puerperal condition, while the blood serum has markedly poisonous properties, thus showing that the poisonous substances which are normally eliminated through the kidneys are retained in the circulation, and so produce the characteristic symptoms of eclampsia. A modification of this theory is that of Bouchard, who includes also a failure in function on the part of the liver. This view has recently been considerably strengthened by the experiments of Russian investigators with carbamic acid, which is nearly the same as uric acid, and only one step below urea in the oxidation process. They have found that when this substance is given to rabbits by the mouth and stomach, it exhibits no poisonous properties, but, when the blood is diverted from the liver and carried directly into the vena cava, it is extremely poisonous. In other words, the liver evidently renders the carbamic acid innocuous.

In a certain percentage of cases (about five) no evidences of kidney or liver trouble are present, and these are believed to be due to heightened irritability of the nerve centres, or to excessively strong stimuli from the uterus. Pregnancy undoubtedly heightens the excitability and irritability of the nervous system, and also increases the tendency to reflex action. This predisposition must be most manifest in nervous women and in primiparæ, especially if the pregnancy is illegitimate. It is precisely in these cases that eclampsia most frequently occurs.

Accepting this etiology, we now have the foundation upon which to build a workable hypothesis of the causation of the convulsions and the various morbid conditions. The convulsions are probably the result of an acute cerebral anæmia, brought about by violent contractions of the arterioles, due to direct irritation of the brain centres by the toxic substances in the blood. Later, as a result of the intense muscular action during the convulsions, the circulation is interfered with, and the blood, seeking the easiest outlet, is forced into non-muscular regions, as the brain, liver, lungs, kidneys, &c., to

such a degree that the congestion of these parts may become excessive, thus leading to cerebral hæmorrhage, œdema of the lungs, and complete loss of the renal function.

TREATMENT.

“Eclampsia occurs almost exclusively in women whose urine has not been examined during pregnancy.” In every case where a physician is engaged for some weeks before the expected date of confinement, he should at intervals make a thorough examination of the urine. A hurried heat-test for albumen is not sufficient, as sometimes there may be no albumen present, but there may be a decided decrease in the amount of urea excreted, which is a danger signal of much greater importance. A decrease to below $1\frac{1}{2}$ per cent needs watching; to below 1 per cent, immediate action. When intoxication exists, as manifested by slight digestive disturbances, headache, &c., free catharsis and restriction of diet will usually suffice. As Tarnier says, “A woman who is put on milk diet for a week will almost to a certainty escape eclampsia.” The amount of urine should be carefully noted in order to immediately detect any marked diminution. If this occurs, give hydragogue cathartics at once, followed, if the decrease is considerable, by a wet pack or hot baths. A good purgative in these cases is 5 to 10 grs. of calomel with 40 grs. to 1 dr. of compound jalap powder, followed in six hours by an enema, if necessary. If, in spite of all precautions, an eclamptic fit occurs, our aim must be to control the convulsion and prevent any recurrence. Unfortunately, for the attainment of this end, many different methods have been recommended, but the three requiring most consideration are these—

1. *Chloral and chloroform.*—This consists in administering at the onset 30 grs. of chloral hydrate by the rectum, and repeating every two hours till the fits cease. The inhalation of chloroform is commenced as soon as any signs of the onset of a convulsion occur, and continued until they cease.

2. *Morphia sulphate.*—This consists in the administration of large doses of morphia hypodermically, as recommended by G. Weit. The initial dose is half a grain, to be followed by a quarter grain every two hours until the fits cease. Not more than 3 grains should be given in the twenty-four hours.

3. *Veratrum viride.*—This is essentially an American treatment. The convulsion is controlled by chloroform, and, after it is over, 15 minims of the tincture are administered hypodermically. If the fits continue, the drug is repeated in 5 minim doses until the convulsions are under control. It is

sometimes combined with chloral hydrate, as much as 1 oz. of this drug being injected as an initial dose into the rectum.

As to the relative value of these three methods, it is extremely difficult to reach a definite conclusion. There is, however, no doubt that both chloral and veratrum viride are more depressant to the heart than morphia, and consequently favour that most dreaded complication, heart failure.

The lowest mortality ever recorded is that of Weit, who in sixty cases had only two deaths—a remarkable result. As a comparison of the chloral and morphia methods, the following statistics from the Rotunda Hospital, Dublin, are of considerable importance, since the treatment was carried out with the same class of women, and under similar conditions, whether favourable or otherwise. In twenty-six cases treated by chloral and chloroform, there were eight deaths, a percentage of nearly 31; in seventeen cases treated with morphia there were three deaths. In one of these, there was considerable doubt whether the case was eclampsia or not, but, taking the mortality as three, this gives a percentage of nearly 18, thus favouring strongly the latter method. In private practice better results can undoubtedly be obtained, since, in some cases at least, women are only sent into hospital when *in extremis*. The average mortality with veratrum viride in the United States is between 20 and 25 per cent. It is unfortunate that there is no institution where the three different methods have been used, so that an accurate estimate could be arrived at of their comparative value. There can be little doubt, however, that morphia would win the victory.

Our second line of attack, which is common to all the above methods, consists in endeavouring to eliminate the poisonous substances circulating in the blood. For this purpose, we first cause free purgation. If the patient is conscious, calomel and jalap as above mentioned may be given, or repeated doses of concentrated Epsom salts. If, however, the patient is comatose, two minims of croton oil, made into a small bolus with butter, should be placed as far back on the tongue as possible, or elaterium (quarter grain) similarly prepared may be used. A few hours afterwards, use a large soap suds enema if necessary. Every effort should also be made to encourage free sweating. The patient must be kept in blankets, and repeated hot baths should be given if she is conscious. If not, a hot wet pack, or, if possible, a steam or vapour bath, which is more efficacious, should be given, lasting twenty to thirty minutes. Endeavour, also, to increase the amount of urine by hot stupes over the kidneys, and abundance of fluid by the mouth if the patient is conscious. An excellent and

reliable means of promoting diaphoresis, and, at the same time diluting the toxic blood, is saline infusion. As much as a pint may be injected under one or both breasts, or, if the necessary apparatus is not present, several quarts may be passed high into the rectum. In either case, the only force used should be that of gravity. Pilocarpin need only be mentioned to be condemned. The mortality in the Edinburgh Maternity Hospital while it was in use there was 66·6 per cent. It strongly predisposes to pulmonary œdema, which explains the high mortality.

Our third aim in treatment is to prevent complications. Great care must be taken to prevent the patient from injuring herself during the convulsions. The onset of a fit is usually heralded by eye symptoms, such as nystagmus and irregular contraction or dilatation of the pupils, and sometimes by vasomotor disturbances, as sudden flushings of parts of the face or neck. These should be closely watched for, and, if chloroform is being used, it should at once be administered. An ice-bag to the head tends to prevent congestion of the brain. All feeding by the mouth must be stopped, on account of the danger of setting up deglutition pneumonia; if food is necessary, nutrient enemata may be given. The head should be kept low, and turned to the side to prevent the saliva from reaching the lungs. If the heart becomes weak and rapid, strychnia should be given hypodermically.

We now come to some disputed points in treatment.

First, the advisability of induction of premature labour, or of immediate delivery. The supporters of these methods claim that, with the emptying of the uterus, the fits will cease. Clinically, this is opposed to facts, since uterine contractions directly excite the convulsive attacks, and the effects of pregnancy on the maternal organism by no means disappear immediately after delivery. It would seem better not to induce labour unless all other means of checking the convulsions have failed. In such cases, probably the most satisfactory course, where there is only slight dilatation of the os, would be to use the method of Krause—i.e., to pass slowly one or two large rubber catheters, well sterilised, deeply into the uterus. This is easily done, and above all causes the least possible irritation to the maternal organism. A point worthy of notice is the rapid dilatation which often occurs during a vapour bath, due, probably, to the almost complete relaxation; cases are even on record of delivery during the course of such a bath. If, however, labour comes on spontaneously, the best plan would be to shorten its duration as much as

possible. Apply the forceps and deliver the child as soon as the necessary conditions are present, but always under deep *anæsthesia*. Never adopt such violent measures as *accouchement forcé* with or without podalic version, or wide crucial incisions of the cervix, as advocated by Dührssen. The dangers are enormous as compared with the problematic good that may result.

Another unsettled point is the advisability or otherwise of venesection. In most cases, I think this would be contra-indicated on account of the resulting increased tendency to heart failure, which is already very great. Its only justification would be with a strong plethoric woman, with over-distention of the right heart. Even here, free diaphoresis, with saline subcutaneous injections, would be of less danger and of equal value, and would serve the same ends. The blood of eclamptic women contains highly poisonous substances, and it is natural to suppose that all the fluids in the body are equally contaminated with these substances, though, perhaps, not in so concentrated a form. Venesection is performed, and a considerable quantity of blood is drawn off. Immediately, the depleted blood-vessels begin to exact contributions of fluid wherever obtainable, but from contaminated sources. In a comparatively short time, the amount of fluid circulating in the vascular system is as great as before, with this difference, however, that it is a fluid still toxic in character, perhaps almost as poisonous as before, but containing a greatly diminished quantity of its vital elements—the red blood corpuscles—and hence very weak in its nourishing and supporting qualities. The favourable effects of the venesection, as often happens, pass off in a few hours, and the convulsions return. We now have to deal with a patient in whose blood-vessels is circulating a fluid still toxic, consisting largely of serum, and whose vital force has been artificially greatly diminished. Can such a woman stand the same chance of recovery as one whose whole system has been flushed by free purgation, diaphoresis, and saline infusions, and whose blood still contains in undiminished proportion the essentials for the best sustenance of her body?

The prognosis for the life of the infant in eclampsia is always grave; at least 50 per cent of the children die. The danger to the mother varies with the period. During pregnancy it is less dangerous than during labour, and it is least of all dangerous during the puerperium. If the convulsions are checked before labour comes on, the prognosis is improved. If labour comes on before they are checked, the

shorter its duration the more hopeful is the outlook. Of course, the more convulsions there are the more gloomy is the prognosis, but there is always hope, as recovery has been reported after one hundred seizures; as a rule, ten constitute a serious case. A clinical point may be mentioned here: women whose urine is loaded with albumen, and who present a condition of general anasarca, are less liable to have convulsions, and, when they do occur, more readily respond to treatment than those in whom there is perhaps only a trace of albumen in the urine, but with tube-casts present, and marked diminution in the amount of urea excreted.

The following short notes of three cases, with rather unusual aspects, may be of interest. The first two occurred in the Rotunda Hospital, Dublin:—

CASE I.—M. S., æt. 24, primipara, seven months pregnant. Prior to admission, she had seven eclamptic seizures, and was given half a grain of morphia hypodermically. On her way she had another fit. Immediately on arrival, she was given 2 minims of croton oil. In the next six hours she had seven fits, half a grain of morphia being given. During the next three hours two more convulsions occurred, quarter of a grain of morphia being given; also two enemata, both of which were retained. One hour later she had another seizure; a steam pack was used, which caused free perspiration. Some hours later labour supervened, and she was delivered with the forceps of a dead child as soon as dilatation was complete. Next morning, after being unconscious for thirty hours, she became semi-conscious, and passed 16 oz. of urine. She was given calomel and compound senna mixture. A short time afterwards the bowels moved freely, and she passed 16 oz. of urine. Two days later, puerperal mania developed; she was very restless and excited, with hallucinations, refusing food. This lasted three days, and disappeared. The patient became convalescent, and was discharged on the thirteenth day. In all, this woman had eighteen fits.

CASE II.—M. R., æt. 30, primipara, seven and a half months pregnant. Patient had some pains during the night, and, thinking that labour was coming on, walked with her husband some miles to the hospital. Some hours after, she had a peculiar fit, in which she tried to strike anyone who came near her; it lasted one minute. The bladder was catheterised, and 4 oz. of blood-stained, highly albuminous urine withdrawn. Forty minutes later she had another seizure, half

a grain of morphia was administered, and she was put in a vapour bath for thirty minutes. She did not again become conscious, fits occurring every forty-five minutes. Three minims of croton oil had no effect. Quarter of a grain of morphia was given in four hours, and again in two hours; also, two more vapour baths. The temperature rose to 106.6° , the pulse to 134, and she died shortly after. In all, there were thirteen fits, the longest lasting five minutes. Vaginal examination showed the os to be dilated to the size of one finger.

The *post-mortem* revealed that the uterus was studded with small myomata, and that the liver was extremely large and fatty. The other organs presented the usual changes.

CASE III.—E. J., æt. 29, primipara, full term. The patient was confined on 13th August, 1901, at 7 A.M.; normal labour, a healthy child being born. At 2.30 P.M. she had an eclamptic seizure, another at 5, another at 6. Fifteen grains of chloral were given by the rectum. A fourth fit occurred at 10 P.M. One-sixth of a grain of pilocarpin was administered hypodermically. Three more convulsions occurred during the night and early morning, a quarter of a grain of morphia being given. At 7 A.M. she was taken to the Maternity Hospital, and a quarter of a grain of morphia again given. I saw her for the first time at 9 A.M., in consultation. She was then comatose, and becoming very restless, and therefore a quarter of a grain of morphia was again given. She was then given a vapour bath, lasting thirty minutes, which produced free diaphoresis. A large amount of saline infusion was injected high into the rectum, and 2 minims of croton oil were given. She remained quiet during the rest of the day, although unconscious. At 9 P.M. she was found almost dead, the throat being plugged up with mucus, and the lungs markedly œdematous, probably the result of the earlier treatment. The mucus was immediately sucked out with a catheter, hot fomentations applied to the chest, and strychnine administered hypodermically. She improved rapidly, passed a fair night, and woke up next morning conscious for the first time in thirty-six hours. She continued to improve, but there was slight pyrexia from the onset, with some cough. On the sixth day, she left for home. A puerperal ulcer developed in the site of the perineal laceration, but this yielded to treatment. I saw her twice again in consultation, as the fever and cough continued. She did not look at all seriously ill, but the lungs presented signs of

pneumonic phthisis, although no bacilli could be found. A month after leaving the hospital, her husband was awakened by hearing a spasm of coughing, and, a few seconds later, blood welled out of the mouth, and she fell back dead. It was afterwards learned that she had been coughing for some time before her confinement, although this was denied by the patient herself. The husband's first wife died of tuberculosis two years before.

While there are many diseases in which the physician may well feel sceptical as to the value of medicines, there is no doubt that, in the large majority of cases of eclampsia, we can go forward fearlessly, with the knowledge that, in the fight with grim death, our chances of success are good. The effects of proper treatment are immediate, showing themselves within a few hours in the disappearance of convulsions, the return of consciousness, and the re-establishment of the normal urinary secretion: and thus we are encouraged to continue the struggle with the grave problems which ever present themselves to prove our professional attainments and knowledge.

CURRENT TOPICS.

ANDERSON'S COLLEGE.—Dr. Jas. H. Nicoll has been appointed Professor of Surgery in the College.

DR. GEORGE S. MIDDLETON has been appointed one of the Examiners in Medicine for candidates for commissions in the Royal Army Medical Corps.

THE Secretary of State for India has decided to approve of an increase to the pay of officers of the Royal Army Medical Corps below the rank of major while serving in India, and also of the issue of charge allowances for senior medical officers of station hospitals there.

NEW PREPARATIONS, &c.

"TABLOID" KINO COMPOUND POWDER, *B.P.* GR. 5 (0.324 gm.) (London: Burroughs Wellcome & Co.), claims to retain in a

marked degree all the properties of freshly-prepared compound kino powder. Each product represents 5 grains of the official powder.

TABLOID UREA, GR. 5 (0.324 gm.) (London: Burroughs Wellcome & Co.), is a convenient mode of administering definite quantities of this substance as a medicine. The taste, unfortunately, if the tabloid is dissolved in the mouth, is distinctly nauseating.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING VII.—14TH APRIL, 1902.

The President, MR. H. E. CLARK, in the Chair.

I.—FRESH SPECIMEN.

By MR. A. E. MAYLARD.

Mr. Maylard showed as a fresh specimen a sarcoma of the lower end of the femur, which had fungated on the inner side of the knee, and bled profusely.

II.—PROSTATECTOMY BY THE COMBINED SUPRAPUBIC AND PERINEAL METHOD.

By DR. JAMES LAURIE.

H. E., aged 56, labourer, was admitted to the Greenock Infirmary on 2nd November, 1901, suffering from retention of urine, due to enlarged prostate.

Previous History.—Patient has complained of urinary symptoms for some years, and during the last eighteen months has had several attacks of complete retention of urine, accompanied with severe pain.

On admission the bladder was found to be greatly distended, and patient had complete inability to pass urine, in spite of

the treatment, which was continued for a week, of rest in bed and the frequent use of a soft rubber catheter, he still complained of severe pain, requiring the use of hypodermic injections of morphine at night. The bladder was sounded for stone, but none could be detected. Cystitis was present in a moderate degree.

Examination *per rectum* showed the prostate to be considerably enlarged, the left lobe being apparently much larger than the right.

The operation (Nicoll's method) was performed on 11th November. An incision was made over the pubes, and the bladder opened, stitched to the skin, and douched with saline solution. Patient was then placed in the lithotomy position, a sound introduced into the urethra, and a curved incision, with the convexity forwards, was made in the perineum, extending from one ischial tuberosity to the other.

The central tendon of the perineum was cut, the rectum thrown down, and a good view of the prostate obtained. With the left fore- and middle-finger in the bladder the prostate was pushed well down into the perineum, the capsule of the gland on either side incised, and the lobes shelled out with moderate ease by the right fore-finger. A small, hard, dark-coloured stone lay in the post-prostatic pouch, and, no doubt, accounted for the severe paroxysms of pain from which he suffered.

The prostatic tissue within the bladder formed a collar around the urethra, and was not removed, as I considered that it would shrink, on account of the fibrous contractions which would occur from the removal of the lateral lobes. A supra-pubic drain was inserted, and led into a bottle at the bedside. This acted satisfactorily, and patient was dismissed on 1st February, 1902, with a small fistula, but able to retain his urine for eight hours. Patient did not suffer appreciable shock. The temperature never rose above 100°.

Dr. Nicoll congratulated *Dr. Laurie* on the success of the operation. At the same time he thought that there was some back pressure remaining, and he feared that the collar of tissue left round the urethra might shrink down and renew the obstruction. He had found it useful some ten days after the first operation to attack the collar or central lobe, and remove it too.

An informal discussion followed, in which *Mr. Maylard*, *Dr. Newman*, *Dr. A. A. Young*, and the *President* took part.

III.—FRACTURE OF PELVIS WITH RUPTURED BLADDER.

BY DR. JAMES LAURIE.

R. W., aged 29, brakesman, was admitted to the Greenock Infirmary on 19th November, 1901, having been accidentally crushed between the buffers of two railway waggons.

On admission he was in a state of extreme collapse, evidently the result of internal hæmorrhage.

He complained of pain in his back, over which there was some bruising, and pain also on the upper and inner side of the left thigh.

The abdomen was distended, dull on percussion in the lower segment, but the flanks were clear.

A soft rubber catheter was passed into the bladder, and 6 oz. of blood-stained urine drawn off.

A diagnosis of ruptured bladder was made, and an immediate operation decided upon. Owing to his collapsed condition, it was not considered advisable to further test the bladder by injections of measured quantities of sterile water and re-measuring on withdrawal.

Operation.—A median incision was made, extending from the umbilicus to the pubis. The pre-vesical space was found filled with blood and urine.

There was extensive bruising around the base of the bladder and the peritoneum.

Having washed out the parts with sterile salt solution, the peritoneum was opened. The intestines and base of the bladder being found free from injury, the peritoneum was at once sutured.

The bladder was opened in the middle line, and found partially filled with blood and urine. On examining the interior of the bladder with the finger, a rounded opening, the size of a sixpence, was found in front on the right of the middle line, and a tear, fully 2 inches long, communicating with a fracture of the horizontal ramus of the pelvis on the left side. The urethra was uninjured.

The bladder was stitched to the skin on either side and in front. A suprapubic drainage-tube was inserted, and the wound closed with silkworm-gut sutures.

The urine was drained into a bottle at the side of the bed, and, on the whole, the drainage-tube acted satisfactorily.

The bladder was douched with peroxide of hydrogen, 3 per cent in normal saline solution.

The suprapubic wound healed by granulation.

There was no infection of the pre-vesical space. The progress was uneventful, and he was dismissed on 4th April, 1902. He is able to retain his urine all night, only complains of a slight awkwardness in going up or down stairs, but he walks well.

IV.—CHOLESCYSTOTOMY.

By DR. JAMES LAURIE.

CASE I.—D. M'V., aged 53, yachtsman, was seen by me in private on 10th January, 1902, on account of an acute gall-stone attack.

Temperature 103°, chills and shiverings, tenderness over liver and gall-bladder, no jaundice.

He gave a history of a similar attack last November, which, like the present one, required morphine for the alleviation of pain.

He was admitted to Greenock Infirmary on 15th January, at which date his temperature was 102·8°.

In addition to the signs above detailed, there was dulness in the lower lobe of the right lung, with absence of respiratory murmur. On the 17th an aspirating trocar was introduced over this dull area, but nothing was found. Following upon aspiration the temperature dropped to normal and remained so until 11th February, when cholecystotomy was performed, and 54 stones (weighing 160 grs.) were removed from the cystic duct. The abdominal incision employed was one through the rectus muscle, supplemented by another parallel with the costal margin. A drainage-tube was inserted into the gall-bladder, and the gall-bladder stitched to the aponeurosis, and the wound closed with silkworm-gut sutures. The tube was led into a bottle at the patient's side, and the wound was dressed for the first time on the fourth day. The tube was removed on 24th February.

The temperature remained normal after operation, and patient made an uneventful recovery, being dismissed well on 28th March.

CASE II.—Mr. S., aged 38, private patient, has suffered for sixteen years from more or less constant pain in the right side and back. Severe paroxysms of pain every six weeks, with vomiting, no jaundice. On palpation during a paroxysm, a tense, rounded swelling, tender, could be felt in the region of the gall-bladder. No history of having passed stones.

Operation (23rd March, 1902).—Abdominal incision as in

previous case; tamponade of abdomen; gall-bladder opened; escape of dark-coloured bile; two large stones (weighing 130 grs.) removed, the second stone adherent to the cystic duct; separated with difficulty; followed by escape of a drachm of pus, thereafter bile; drainage of the gall-bladder; wound stitched; tube removed in fourteen days; patient allowed up in fifth week, with a small biliary fistula, which, in the seventh week, required to be dressed every fourth day.

V.—ACUTE NON-SUPPURATIVE PERINEPHRITIS.

BY DR. DAVID NEWMAN.

Inflammation of the cellular and adipose tissue surrounding the kidney has been divided into three varieties—the lipomatous, the sclerosing, and the suppurative. The case about to be described does not, however, come under any of these headings, and must be described as one of acute non-suppurative perinephritis, and as it is the first case of the kind which has come under my notice, either in surgical practice or at an earlier period while I was pathologist in the Glasgow Royal Infirmary, I deem it to be one worthy of placing on record.

Acute pleurisy lasting for over four weeks, followed by severe pain in the right lumbar region, unassociated with fever or any symptoms of renal disease—Physical signs showed great enlargement in the right renal region.

R. A. was admitted to the Glasgow Royal Infirmary on 20th December, 1901. He enjoyed good health up to eight weeks prior to admission, when, according to Dr. Service (of Mossend), he developed a pleurisy. For this he was treated, and confined to the house during four weeks. The pleurisy was said to have started on the right side, and then extended to the base of the left lung. The symptoms and physical signs of pleurisy having disappeared, the patient was allowed out for the first time about three weeks prior to admission to the infirmary. On this occasion the patient believes that "he caught a chill," and the next day he complained of severe pain in the right lumbar region, and this continued and increased in severity up to the time of admission. When he was brought into hospital he looked extremely ill. His face was pale, with dark rings under the eyes. The temperature was 99° F., respirations were 20 per minute, and the pulse was 88, and of very low tension. He had a slight cough, which he tried to restrain, on account of the pain produced

by the act of coughing, and there was a little muco-purulent expectoration. There was very slight dulness at the base of the right lung behind, and marked diminution in the respiratory murmur, and also of the vocal resonance and fremitus. The heart was normal.

While sitting or standing the body was bent forward and inclined towards the right side. In bed he lay with the spinal column fixed and slightly deviated to the right, so much so that the lower ribs almost touched the crest of the ilium. The right thigh he kept flexed, and he could not extend it beyond 165 degrees. Every movement cost the patient great pain in the loin, but he did not complain of any pain in the thigh or knee. There was no atrophy of the muscular structures, no feverishness, and no pain below the level of the crest of the right ilium. He complained of considerable spontaneous pain, and great tenderness on pressure on the right side of the abdomen, and on palpation the abdominal muscles were found to be very rigid, so that it was only when the patient was placed under the influence of an anæsthetic that the swelling in the renal region could be made out.

On examination of the abdomen under chloroform, the whole space between the right costal cartilages and the ilium was found to be occupied by a swelling, extending forward to within 4 inches of the middle line. The liver was pressed downwards and to the left, so that the lower margin was $3\frac{1}{2}$ inches below the ensiform cartilage. The swelling in the renal region was non-fluctuant, firm, and slightly elastic; there was no very distinct bulging, and no unnatural colouration of the skin over the part. The urine was pale amber coloured; slightly acid; the specific gravity was 1015, and on standing a slight mucous deposit was thrown down. There were no tube-casts, no albumen, and no pus or blood found in the urine.

21st December.—During the night the patient suffered great agony, and the pain was only relieved by hypodermic injections of morphia. During the night the temperature never rose above 99.8° . The patient was placed under an anæsthetic, and the lumbar region explored. Surrounding the kidney on all sides there was a huge mass of recently formed inflammatory tissue mixed with fat. Before the kidney was reached the incision had to extend through fully $3\frac{1}{2}$ inches of this inflammatory material. On pressing the hand upwards under the diaphragm, it was found to extend almost to the middle line, and downwards it extended well into the false pelvis. Several incisions were made with the expectation of finding

pus, but none was discovered. Drainage-tubes were inserted, and the wound sutured. The kidney appeared to be healthy, and did not contain any calculi.

30th December.—Since the operation the patient was almost entirely relieved of pain, and a considerable quantity of serous fluid and oil escaped from the wound, but no pus. The temperature remained normal, and the urine typically healthy.

8th January, 1902.—Since last note was made the same kind of discharge had continued to escape, but in smaller quantities than during the first week after the operation. Now, the swelling was diminished in size by about one-third, and the patient did not now complain of any pain.

24th January.—The drainage-tubes were kept in until 17th January, when they were removed, as the discharge had practically stopped. Now the swelling was about half the size it was prior to the operation, and the wound being completely healed, the patient was dismissed, being now practically well.

7th April.—Since the patient was dismissed he reported himself on several occasions. When examined to-day the renal swelling was found to be about one-third in size to what it was on admission in December of last year. The patient now complains of no pain, but has a sense of weight in the lumbar region.

The loose perirenal adipose tissue, situated as it is in direct contact with the kidney, is very liable to secondary infection, either from the kidney or from distant parts. That it is prone to suppuration has long been recognised, but Rayer was the first writer who gave a clear and elaborate description of perinephritis. He classified the disease into three groups, viz. :—

1. Primary perinephritis, or those cases where the inflammation arose independently of any fistulous opening from or disease of the kidney.

2. Consecutive extrarenal suppuration, or abscesses secondary to inflammation of the kidney, but without any fistulous communication between the kidney and the adipose tissue of the capsule.

3. Consecutive extrarenal suppuration, where the inflammation was due to a fistulous communication between the kidney and the perinephric cellular tissue.

After Rayer, valuable contributions to the subject were made by Féron, Parmentier, Lemoine, Hallé, Guérin, Trousseau, Kraetschmar, Duffin, and Dickinson. From statistics collected

by some of these authors, it appears that perinephritic abscess is most frequently caused by inflammation extending from within the kidney tissue, and it is shown only in a few instances that suppurative perinephritis originates from other causes.

This is not only true of general pyæmia, but the statement is even more applicable to localised infective processes. For example, not only has the disease been traced to septic infection in febrile conditions—such as typhus, enteric fever, and variola—but it has also been shown to arise from purulent absorption in cases of inflammation of the connective tissue surrounding the uterus, vagina, or rectum, succeeding parturition or an operation. Trousseau recorded a case in which the perinephritis was of uterine origin, and where he believed the inflammation to have extended by way of the iliac veins. In cases of puerperal perinephritis, which is by no means uncommon as a complication of pelvic cellulitis, an abscess frequently develops in the neighbourhood of the ovaries or Fallopian tubes, and, gradually dissecting its way, ultimately spreads itself out between the lumbar muscles and the peritoneum. Operations upon the testicle, or upon the spermatic cord, are very liable to excite inflammation of the connective tissue surrounding the bladder, especially at its base, from whence suppuration may extend to the perirenal connective tissue. Cases are upon record in which the disease succeeded operations upon the testicle, urinary bladder, and urethra, or formed a sequence to conditions such as hydrocele, varicocele, or hæmatocele. In a similar manner operation upon the perineum, rectum, and uterus, or suppurative disease of the gall-bladder, liver, and spleen, have caused the accumulation of pus around the kidney.

Koenig narrates a case of excision of the rectum, in which the suppuration extended upwards from the pelvic cellular tissue, along the posterior wall of the rectum to the perirenal adipose tissue of the left kidney, and spread itself out as far as the descending colon.

In the great bulk of cases of perinephritis consequent to the extension of infective material from distant parts, the disease culminates in suppuration. In a few instances, however, such as the case above described, great induration may take place without any suppurating foci forming. Not infrequently an inflammatory process is induced by local injury, but occasionally it may be attributed to the extension of non-pyogenic infection. That this has been so in the present case is very probable. The patient suffered from an acute pleurisy,

which spontaneously recovered without going on to empyema. That an infective process extended from the cavity of the thorax to the tissue around the right kidney seems the most plausible explanation of the case. The pathologist frequently finds cases of non-pyogenic infection of the pleura, where there is great thickening of the connective tissue and adherence of the pleural surfaces without any evidence of purulent infection. One can, therefore, very easily understand that should a loose, poorly nourished tissue, such as the adipose capsule of the kidney, become infected, rapid and extensive induration may be induced.

VI.—CASE OF OLD CALCULOUS PYONEPHROSIS CAUSING INTESTINAL OBSTRUCTION, AT FIRST PARTIAL, LATTERLY COMPLETE.

BY DR. DAVID NEWMAN.

The case is one of considerable interest on account of the difficulty in physical diagnosis. The abdomen was greatly distended by a large pyonephrosis and a sac, formed by the cæcum and the lower portion of the ascending colon, which contained fluid faecal matter.

The patient, Mrs. H., aged 57, was admitted to the Glasgow Royal Infirmary on 1st February, 1902. According to the statement made by the patient, her first serious illness occurred thirty years prior to admission, when she was confined to bed for three weeks by what the doctor called "inflammation of the kidney." At that time she had great pain in the left loin, and during the illness the quantity of urine passed was small, but there was no œdema of any part of the body. From this she made a complete recovery. Five years later she had a second similar attack, but in addition to the pain she also suffered from sickness and vomiting. At this time she noticed that some small stones were passed, but since that time no calculi have come away, nor was gravel noticed in the urine. This second attack lasted for ten days. A third attack occurred ten years ago. Between the earlier illnesses, and from the last attack up till the commencement of the present one, the patient enjoyed moderately good health, although she had been subjected more or less to pain in the left loin when she was tired. Sometimes it lasted for a few days, but was seldom severe. The pain was accompanied by a diminution in the quantity of urine, and by the appearance of a swelling in the left loin. She never noticed either pus or blood in the urine. Seven weeks prior to admission the patient was seized

with a shivering, followed by pain in the left loin, and the reappearance of the old swelling. Since then the pain was constantly present in the left loin, shooting down to the left labia, but not to the thigh. She seemed to progress favourably until a week ago, when she experienced considerable difficulty in getting her bowels to move; she had, however, always been constipated, this was always worse when the swelling in the loin was present. There was no satisfactory movement during the last eight days.

Condition on admission.—The patient was a thin, emaciated woman, her face was puckered, and her eyes prominent, and she looked extremely ill; the temperature was normal, the pulse feeble and thready, and there was an occasional intermission; the heart and lungs seemed normal. The bowels had not moved for a week, but by examination *per rectum* only a few hard masses could be detected; several olive oil and soap and water enemata were given, but without a very satisfactory result. The urine was dark amber; acid; specific gravity, 1024; a distinct trace of albumen; some mucous deposit; but no blood, pus, nor tube-casts were present. Examination of the abdomen showed great distension, similar to what was observed in a unilocular ovarian cyst; the surface was perfectly smooth, and distinct fluctuation could be made out from the right nipple line to the left flank; but while the patient was lying on her back, over the anterior surface of the abdomen a tympanitic note was elicited as far as the left nipple line. Beyond that limit, while the fluctuation was still present, there was an absence of resonance. On moving the patient, so that she lay on her left side, the area of dull percussion was increased towards the left side, and when the patient was lying upon her right side the area of dull percussion was limited by the left nipple line or nearly so, while at the same time a dull area developed close to the region of the ascending colon.

4th February, 1902.—The patient was much weaker to-day, and although every endeavour was made to induce an action of the bowels, no result followed. An examination was made under chloroform, when I concluded from physical examination of the abdomen that a portion of the bowel was greatly distended, and that this distension was probably due to pressure upon the descending colon by the greatly distended left kidney. On examination of the left kidney, it was found on deep palpation to extend as far as the middle line, although a clear percussion could be elicited to the left of the rectus abdominis muscle. I had considerable difficulty in deter-

mining how to proceed. Undoubtedly the abdominal obstruction was the immediate danger, but if the pressure could be relieved by evacuating the pyonephrosis a good result might follow, and the extremely weak condition of the patient favoured operating upon the kidney first. By a lumbar incision the kidney was freely incised, and about 40 oz. of thick gelatinous muco-purulent fluid slowly escaped. When this had been all washed out, a large calculus was discovered impacted in the pelvis of the left kidney. The stone was so firmly fixed that it could only be removed in portions, and one part required to be left behind on account of the patient's feeble state under the anæsthetic. The incision in the kidney was stitched to the parietes, and the cavity packed with gauze.

5th February.—The patient was very sick after coming out of chloroform, and died at half-past five this morning.

On *post-mortem* examination the anterior part of the abdomen was found to be occupied by a large sac containing pultaceous fæces; this sac was as large as a football, and proved to be formed by distended cæcum and ascending colon. The transverse colon and the descending colon were completely collapsed, and on examination a valve-like obstruction was observed immediately below the collapsed large intestine. The left kidney was found to be greatly enlarged, and its capsule thickened and adherent; the pelvis was enormously distended, and contained a portion of a calculus; the other abdominal organs and the thoracic organs were practically normal.

From what was observed during the operation and at the *post-mortem* examination, it was evident that the chronic pyonephrosis of the left kidney, partly by pressure and partly by inducing inflammatory adhesions, had led to a chronic intestinal obstruction which culminated in complete interference with the passage through the alimentary tract. Such a coincidence is so uncommon that I deemed it worthy to bring it before the attention of the members of this Society, as it is the only case of this kind that has come within my experience either as a surgeon or as a pathologist.

VII.—SURGICAL CASES.

By DR. JAS. H. NICOLL.

I. Infant operated on for intestinal obstruction due to a pelvic cyst (of neurenteric canal?)

The child, then 2 weeks old, was seen in consultation with

Dr. Gardner Neill. During the first week it had "strained" much in passing urine or fæces. At the end of that time urinary retention developed—relieved by catheter—and this was followed by intestinal obstruction.

The cause of both was found to be an elastic or fluctuant tumour, lying behind the rectum, and occupying practically the entire pelvis.

Operation (21st January, 1902).—The coccyx was removed, and the tumour opened into from behind. It proved to be a large monolocular cyst, containing clear mucoid fluid. A portion of the wall was excised, and sections made by Dr. Leslie Buchanan show this to be of structure similar to that of the mucous coat of the rectum.

The cyst was partially packed, and has largely contracted. At present a sinus leads from the skin over the former site of the coccyx into the interior of the shrunken cyst. Further measures may be necessary to secure complete obliteration of the cyst.

Remarks.—The cyst is probably connected in development with the neurenteric canal. Such cysts are not very rare. One of the best accounts of them is contained in Bland Sutton's *Tumours, Innocent and Malignant*.

In the *Glasgow Hospital Reports* (vol. ii, 1899), in a paper on "Spina Bifida," are the illustration and account of a cyst in all likelihood of similar origin, though multilocular and lower in site, projecting externally.

II. *Ovary and tube which occupied the upper portion of the labium in a female infant, and ultimately became strangulated, by torsion of the pedicle, simulating strangulated hernia.*

The "swelling" was observed shortly after birth. It was seen in consultation with Dr. Robertson, of Milngavie, when the infant was 4 months old, and was then thought to be possibly an encysted hydrocele of the canal of Nuck.

Three months later symptoms suggestive of strangulated hernia developed—sickness, constipation, and evidence of pain and tenderness, with increased size and tension of the "swelling."

No relief being obtained, the swelling was cut down on, and proved to be the ovary and tube (specimen). These had become strangulated by torsion of the pedicle. The pedicle having been ligated and pushed back into the abdomen through the inguinal canal, that channel was closed by suture.

Remarks.—Cases of descent of the ovary into the labium through the inguinal canal are by no means rare, and authors referring to the occurrence explain it as being obviously the result of an action of the round ligament analogous to that of the gubernaculum on the testis.

III. *Specimens from three recent cases of perforated gastric ulcer.*

CASE 1.—Miss M. seen with Dr. John Ritchie on 19th March, 1902. Operation eight hours after perforation. Sudden death on the second day, with symptoms (sudden lividity and convulsions) suggestive of pulmonary embolism.

CASE 2.—Miss W., seen with Dr. Macleod on 26th March. Operation ten hours after perforation. Patient doing well.

CASE 3.—Miss G., seen with Dr. T. Jackson. Operation sixteen hours after perforation. Patient doing well.

Remarks.—While it would be going too far as yet to say that the treatment of gastric ulcer is surgical, there can be no question that the treatment of perforated gastric ulcer calls for prompt surgical measures, and that the success attending such measures is directly proportional to the promptitude with which their employment is decided on.

In an interesting paper on "Perforated Gastric Ulcer" (*Glasgow Medical Journal*, November, 1901), Dr. R. O. Adamson brings forward statistical evidence in support of this, and, as an exception proving the rule, quotes a case which I formerly brought before the Glasgow Medico-Chirurgical Society, as that showing the longest interval between perforation and successful operation of which he has been able to find a record. In that case (*Glasgow Medical Journal*, April, 1900), operation was undertaken six days after perforation.

While surgeons are agreed as to the advisability of early operation in perforated gastric ulcer, opinion varies widely on some of the details of such operative treatment. Particularly are authorities divided on the *method of dealing with the perforation*—some advising simple suture, others paring of the edges and suture, others the excision of the ulcer with an area of neighbouring gastric wall, and others still more elaborate methods involving gastro-enterostomy or the use of omental grafts.

On the method of cleansing the abdomen of extravasated stomach contents, a sharp line divides the advocates of flushing and of sponging, of temporary turning out of the intestinal

coils, and of cleansing without displacement of the bowel, of the expenditure of much time on the "toilet of the peritoneum," and of the rapid completion of the operation, and consequent entrusting to the absorptive powers of the peritoneum of a certain possible residuum of extravasated material.

With reference to drainage also, opinions are at variance, its exclusion from practice and its employment each having advocates, while those who employ it are divided as to the best means for securing its efficiency.

IV. Four cases of operation for typical affections of the gall-bladder.

The patients, all middle-aged women, were operated on recently. The symptoms in each were those more or less typical of biliary obstruction and gall-bladder involvement, and need not be detailed.

CASE 1.—Seen with Dr. M'Clymont, of Ardrossan. Operation in the M'Alpin Nursing Home, Glasgow. Gall-bladder found much distended, no stones present, neck and duct bound by adhesions. Adhesions freed and gall-bladder drained. Recovery, no fistula.

CASE 2.—Seen with Dr. Cook, of Greenock. Large single stone (specimen) removed from neck of much distended gall-bladder, and bladder drained. Recovery, no fistula.

CASE 3.—Seen with Dr. J. P. Boyd. Gall-bladder found contracted, with adherent omentum and stomach, and small stone impacted in common duct. Stomach freed, stone crushed and passed on into intestine, and gall-bladder drained. Recovery, no fistula.

CASE 4.—Seen with Dr. Macdonald, of Ardrossan. Operation in the M'Alpin Home, Glasgow. Gall-bladder found distended by a large number of small faceted stones. Three hundred and eighty-two (specimen) have been preserved, a few of the smaller ones having been lost during removal and subsequent washing. Recovery, no fistula.

Remarks.—Perhaps the two most striking facts which the work of Mayo Robson and others have made clear are, in the first place, the variety of symptoms suggestive of gastric, intestinal, and other troubles which, in addition to those proper to biliary disorders, may depend on diseased conditions of the gall-bladder and ducts; and, in the second, the amenability to surgical treatment of many of these diseased conditions.

V. *Case operated on for femoral hernia, with an account of the operation carried out.*

The steps of the operation performed fall into two groups—those concerned with the obliteration of the sac, and those employed for the closure of the ring.

Method of dealing with the sac.—The sac is opened and freed of contents. It is isolated from surrounding tissues, and its neck detached from the internal aspect of the abdominal wall for a distance of at least 1 inch in every direction from the margin of the ring. It is next bisected from fundus to neck. In one half near the neck an incision is made, and the two halves are then interlocked by pulling the one through the incision in the other, after which the sac is reduced through the femoral ring. It lies completely within the abdomen, between the peritoneum on the one hand and the transversalis and iliac fasciæ on the other, no part of it remaining in the femoral canal or ring. It thus at one and the same time forms a buttress over the internal aspect of the femoral ring, and converts the contour of the peritoneum over the femoral ring, as viewed from the interior of the abdomen, from a depression into a prominence.

Closure of the femoral ring.—An incision is carried, from femoral vein to pubic spine, through pubic portion of fascia lata and pectineus to ramus of pubes, and the detached origin of the pectineus retracted. The bone is perforated at two points from half an inch to one inch apart. Two stout absorbable gut ligatures are led through one perforation in the bone, then through Poupart's ligament in the form of loops, and out again through the second perforation in the bone. The respective end are tied over the antero-superior aspect of the pubic ramus, the loops thus bringing Poupart's ligament down to the postero-superior aspect of the ramus, obliterating the femoral ring.

The detached origin of the pectineus is laid back in place, and secured by sutures to Poupart's ligament, now fixed to the bone, thus giving additional security.

On looking into the literature of the subject, I find that Roux has been also carrying out in the closure of the ring the principle of attaching Poupart's ligament to the bone—though employing a different method to attain that end—viz., a bent \cap -shaped metal nail.

I believe that an operation carried out on the principle referred to offers a means of closing the femoral canal absolutely and with certainty, and that the method I have

described, and which I had been practising before I learned of Roux's independent work, is preferable to Roux's, which introduces all the possible risks of the permanent lodgment of a metal foreign body, and does not appear to me to afford facilities for that precise apposition of the parts dealt with which secures complete closure of ring, however wide, without risk of compression of the femoral vein.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING VII.—12TH MARCH, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

I.—FRESH SPECIMEN.

BY DR. J. M. MUNRO KERR.

Fœtus with deformity of the upper limb simulating a foot.—Dr. Munro Kerr showed a full-time fœtus which he had delivered some five days ago. The mother's medical attendant had delivered the child by traction on the lower limbs, and then passed his hand up to bring down the upper limbs. Bringing down one, it seemed exactly like the lower limb, as what appeared to be a heel was felt. The doctor imagined that he had to do with either the condition of locked twins or a double monster. On palpating the abdomen I concluded that there was no second child, and that what we had probably to do with was a malformation of the limb. This turned out to be the case. After having brought down both limbs, I perforated the after-coming head, which seemed unusually large.

II.—DISCUSSION ON THE TREATMENT OF ABORTION.

Dr. Robert Jardine opened the discussion by reading the following paper:—

In a recently published book the author says—"Abortion is the term applied to the expulsion of the ovum from the

uterus before the formation of the placenta, i.e., before the end of the third month." To decide whether or not this is a true definition, it will be necessary to find out what he means by the ovum. He says it consists of placenta, chorion, amnion, umbilical cord, liquor amnii, and foetus. Now, suppose we take an abortion, say at the end of the first month, are we to consider the abortion to be complete if the representative of the placenta (the decidua serotina), and the chorion, amnion, with the small embryo were expelled? Ten days ago I was called to a patient who had been bleeding for some time, and had passed several large clots. In one of these I found a complete ovum, about the size of a pigeon's egg, with the decidua serotina at one end, but no trace of the decidua vera or reflexa. According to the above definition this should have been a complete abortion, but an examination revealed that the decidua vera and reflexa were still in the uterus. Unless the decidua are considered to represent the placenta, which the vera and reflexa certainly do not, the definition just given is faulty. In my opinion many authors and teachers of midwifery err in not making it plain that it is not the ovum, but the ovum and the decidua, which constitute complete abortion. The true definition of an abortion I take it to be the expulsion of the uterine contents up till the end of the third month, that is, all which lies inside of the separation layer of the decidua vera and serotina. From the end of the third month onwards until the foetus is viable, the term miscarriage is the correct one, but we are not dealing with this to-night.

I shall now shortly consider the treatment of the different varieties, but shall first say a few words on prophylaxis.

Prophylactic treatment of abortions.—There can be little doubt that an unhealthy condition of the uterus, prior to conception, is a very fruitful cause of abortions. Prophylactic treatment should, therefore, begin before conception. We should endeavour to get the uterus into as healthy a condition as possible by curing the endometritis or whatever may be wrong. During the treatment of endometritis, a patient should not indulge in sexual intercourse, as this not only retards the cure, but if she become pregnant before a cure is effected, an abortion will be almost sure to follow. I have seen a number of instances of this. In syphilitic cases appropriate treatment must be adopted, and must be persevered in during the whole pregnancy. In such a case the male element should also receive his share of treatment, but it is an exceedingly delicate problem to solve how to get both parents under treatment without causing discord. Other constitutional

diseases, such as anæmia, &c., should be carefully attended to. If all abortions were properly treated there would be fewer recurrences.

The treatment of a threatened abortion may be summed up in the one word—rest. Our aim should be to ensure rest, not only of the body, but also of the uterus. The first is obtained by keeping the patient quiet in bed, and the second by administering drugs which have a sedative effect on the uterus. Active purgatives must be avoided, but constipation must not be allowed. A small dose of castor oil or a simple enema may be used. For quieting uterine action various drugs are used, but of all the newer drugs in use I do not think any of them are better or as good as opium used in fairly large doses. *Viburnum prunifolium* is well spoken of, and I have certainly got good results from its use. Ergot is sometimes given in small doses, but I cannot say I have ever seen much good from its use. Its action is very uncertain, probably from the fact that the preparations are not always fresh. Opium and *viburnum* are the two drugs I commonly use. The patient must rest in bed for a week or so until all discharge has ceased. She must be careful not to overexert herself, and when the time of her next period comes round she should stay in bed for a few days. After she has quickened she may use greater freedom. If the uterus should be displaced, it should be put into its proper position and a suitable pessary fitted. Where syphilis is present, anti-syphilitic remedies should be administered, and continued throughout the pregnancy.

Treatment of inevitable abortion.—This may be summed up in a very few words, viz., get the uterus completely cleared out. To accomplish this there are various methods in use.

If the cervix be sufficiently dilated, the whole uterine contents should be cleared out by passing the finger in. Ovum-forceps or the flushing curette may be used, but the finger is preferable, as you know what you are doing. This may be done without chloroform, but it is better to have the patient anæsthetised, so that you can be absolutely sure that everything is removed.

In a case where the discharge is free, but the os undilated, the best plan is to thoroughly plug the cervix and vagina, and wait. Full doses of ergot may be given. After twelve hours, when the plug is removed, it is not uncommon to find the complete uterine contents lying on the top of the plug. If the cervix be not sufficiently dilated to clear out the uterus

with the finger or curette, the plugging may be repeated, but this should not be done frequently, as the pressure of the plug is apt to damage the mucous membrane of the vagina.

In some cases it may be desirable to clear the uterus at once. Dilatation can then be effected by means of dilators, such as some form of Hegar's. The metal ones are the best. Tents are sometimes used, but the difficulty of sterilising them is so great that I do not think they ought to be employed. The cervix should be dilated sufficiently to allow a finger to pass into the cavity. Of course, the curette may be used without so much dilatation, but it is exceedingly difficult to know when everything is removed unless you can explore the cavity with your finger. A hot douche should be used after the uterus is cleared out. As a rule, there will be no bleeding of any consequence, but occasionally there is a considerable amount, but it can be easily controlled by plugging with iodoform or aseptic gauze.

Treatment of an incomplete abortion.—In this condition the uterus should be cleared at once. The only satisfactory way is to put the patient under chloroform, and dilate if necessary, and clear out the uterus with the finger or curette.

In curetting for an abortion one has to be careful not to perforate the uterus. In some cases the wall is so friable that the instrument will penetrate it when very little force is being used. I have fortunately never seen this accident. The uterus is said sometimes to dilate before the curette, and so give the feel as if the wall had given way. I am inclined to doubt this very much. I have never yet seen a case recorded in which this condition was actually demonstrated. In every case in which the abdomen has been opened at once a perforation has been found, or else there has been a dilated Fallopian tube into which the instrument has passed. There is not much risk from the accident, provided the parts are aseptic. The uterus should not be douched out after this accident has occurred for fear of the fluid getting into the peritoneal cavity. The uterine cavity should be plugged, but care must be taken not to force the plug into the rent. If there be much bleeding, or the parts are septic, the abdomen should be opened and the tear stitched. The uterus has been removed, and in a bad septic case this would probably be advisable, but, as a rule, it can be left. In some cases the uterine wall has been found so friable that great difficulty has been experienced in tying the stitches, as they cut through the tissues.

The dull flushing curette is the one generally advised for

use in abortions. I have used it frequently, but in incomplete abortions, I have more than once found it a useless instrument. If the decidua is at all adherent, as it often is in these cases, a large sharp instrument is much more useful, as much less force is required with it than with the dull one. As I have already said, the finger is preferable to a curette, but in some cases you must use the latter instrument.

Treatment of a complete abortion.—In many books this is summed up in the simple statement that it requires no treatment, but with this I beg to disagree. It matters not whether the abortion be completed by nature or by artificial means—the subsequent treatment of the patient is the same. She should be kept in bed for a week at least, and have exactly the same care taken of her as after a full-time labour. Douching is not necessary unless sepsis arise. It is unfortunate that women, as a rule, rebel against resting in bed for more than a day or two after an abortion, and as a consequence many of them suffer from subinvolution, &c.

So far I have hardly mentioned the use of ergot in the treatment of abortions. It used to be, and I suppose still is, frequently given in inevitable and incomplete abortions. The result is sometimes satisfactory, but its action can never be depended upon. I have occasionally tried it, but have now given it up, except along with plugging and after the uterine contents are cleared out, when I sometimes use it. The last case in which I trusted to ergot gave me a lesson I shall not soon forget. As it also illustrates the importance of making sure that the uterus is really cleared out, I shall give short notes of it. Late one night I was sent for, to see a patient of a friend whose work I was doing. I was not told the nature of the case, so had nothing with me but some antiseptics, which I always carry. The patient, a multipara, said that she was three months pregnant, and that something had come away from her. The discharge had been going on for some hours. I found a small foetus, but nothing else except blood-clot. A vaginal examination revealed that the os was closed and nothing protruding. The bleeding had almost ceased. The question arose, was the uterus empty or not? If I had had chloroform with me, I would soon have definitely decided the point, but as it was in the night, and a long way to go for my instruments, &c., I decided to give her ergot. I must confess that I was not very well satisfied with myself, as I felt pretty sure there was still something in the uterus. The result was that when expulsion began severe bleeding set in, and by the time I reached the patient she was nearly pulseless. Under

chloroform I cleared the uterus completely, and by giving a rectal saline injection and hypodermics of strychnine, managed to pull her through. She made a good recovery, and I believe credits me with having saved her life. All's well that ends well, but I do not look upon the case as a particularly creditable one. It taught me the importance of always making sure that the uterus is entirely emptied, and never to trust in ergot.

Treatment of a missed abortion.—When expulsion has commenced, the treatment of this condition is exactly the same as for an ordinary abortion, viz., to ensure a complete clearance of the uterus.

The difficult cases are those in which expulsion has not commenced. If one be sure of the diagnosis, should we proceed at once to clear the uterus, or wait until uterine action begins? If the patient do not suffer in any way, one may safely wait, but if there be any discharge, or the patient's health be affected, the sooner the uterus is cleared the better.

I need hardly say that in dealing with abortions the strictest aseptic precautions should be taken.

Dr. Samuel Sloan said that he would confine his remarks on this discussion to three things which his experience of abortions had taught him.

1. That retro-displacements, congenital or acquired, or partly both, *which had given no evidence of their presence*, were more frequently responsible for abortion in early married life than was generally supposed; and he advocated a systematic vaginal examination in all first cases during the first three months of pregnancy, timely treatment in practically all such cases resulting in prevention of abortion.

2. That ergot in a reliable preparation, such as M.K. & R.'s so-called ergotin pills, may safely be given in threatened abortion if the bleeding be severe and prolonged and not relieved by ordinary measures. In such circumstances the ergot will, of course, by diminishing the bleeding, increase the chance of prevention.

3. That the curette, in gross cases of septic incomplete abortion, is a useless and a dangerous weapon, the finger being the proper instrument there; though, in aseptic cases, or those in which the septic condition is limited to, and dependent upon, partially adherent or detached and retained membranes, the curette might be used, under the guidance of, and as an aid to, a finger.

Dr. Munro Kerr agreed with all that was said of threatened abortion. In inevitable abortion he packed the vagina preferably to immediate emptying of the uterus. He did not encourage the use of ergot. The use of the curette was right in aseptic, but questionable in septic conditions, as in the latter cases there was a danger of opening up fresh surfaces for absorption.

Dr. John Edgar said that in incomplete or inevitable abortion he always dilated and emptied the uterus as far as possible with the finger. Sometimes after separating the ovum Höning's manipulation (bimanual compression of the corpus uteri) was successful in bringing about expulsion of the ovum. If not, he used polypus forceps under guidance of a finger, and finally a sharp flushing curette. Instruments were to be used with caution, but the finger could not always take their place.

When the os was not dilated nor easily dilatable, he always packed both uterus and vagina with iodoform gauze. He left this in from six to twelve hours, and seldom repeated it.

Dr. A. W. Russell said that, notwithstanding the frequent discussion of this subject, the last words had not yet been spoken on it, and we were not yet all agreed on the treatment of abortion. Regarding preventive treatment he became increasingly sceptical as to the value of the specific drugs that were so much lauded, *e.g.*, aletris, viburnum prunifolium, and he felt that he must depend more and more on rest, dietetic, and other regulative treatment. As to the treatment of inevitable abortion it was of the utmost importance in all cases, and from the very beginning of examination, to observe strictly the rules of asepsis. Even those of us who were accustomed to this in hospital and other special work knew how great the tendency was to be slack in this duty when the means were not at hand. It was probably on this account more than on any other, not only that acutely septic cases occurred, but also that so many pelvic ailments of a chronic inflammatory type were afterwards to be traced back to the occurrence of a mishap! Septic abortion would be a much rarer phenomena if the rules of asepsis were properly observed.

He was not disposed in treatment to make any distinction between complete and incomplete abortion, as he believed it to be almost impossible to tell when an abortion was complete, and in any case it was probably desirable to carefully remove

with the curette the decidual as well as the other ovular structures. In this way you were pretty certain to remove any possible fragments of other tissues that might have been left behind. He was quite sure that his results had justified the principles described.

In septic abortions he was aware of the difficulty as to the danger of the curette in perforating the uterus or in opening up fresh surfaces for absorption, but he was satisfied that there was a better chance of good results if he at least used the blunt flushing curette. He had in such cases, and after labour at full term, in this way removed decomposing tissues that were not likely to be otherwise so well taken away, and were, indeed, not believed to be present. If drainage were afterwards secured, and douching properly practised, the danger of absorption was removed.

Something required to be said about the after-care of the case. He thought the operator should see the patient till all danger was past, but if not, he should make sure that the after-treatment as to removal of gauze packing, douching, &c., was thoroughly understood and carried out. This was specially necessary in cases of septic abortion. It was only by such precautions and such treatment, he believed, that the remote results as regards absence of pelvic ailments of a chronic kind would be best secured.

Dr. J. Nigel Stark said that this important subject was well worth debate at this time, although in the history of the Society, at least, two discussions had already been held. He had opened the last one, five or six years ago, and it was interesting to look backwards and contrast the opinions then held with those of the present day. On the whole, of course, there were more points of similarity than of contrast, and the principal difference in practice seemed to be a more ready employment of operation in evacuating the contents of the uterus. When, a few years ago, *Dr. Stark* expressed the opinion that operative interference was frequently necessary to ensure complete emptying of the uterus, a good deal of dissent was expressed, and more reliance on the unaided powers of nature seemed to be held. Now it was more widely recognised that the two great dangers of abortion were sepsis and incomplete removal of the uterine contents. We all realised that an abortion gave us more anxiety and trouble than a full-time confinement, and this because in the latter we could, from the full dilatation of the parts, ascertain with certainty if everything had come away, whereas in the former

small portions of placenta might easily be retained without our knowledge. In fact, it was often very difficult to distinguish between complete and incomplete abortions. With regard to the method of operating when it was required, the curette was, in most cases, a more satisfactory instrument than the finger. If it were used with discrimination, knowledge, and caution, then its dangers had been over-rated. Often it was not possible to force the finger through a narrow cervix, nor to reach the fundus if this could be accomplished. A great many cases of incomplete abortion were admitted into the Samaritan Hospital, and, so far as Dr. Stark knew, no death or even serious consequence had followed the use of the curette with the most thorough anti-septic precautions and the after-swabbing of the endometrium with iodised phenol. The finger or fingers produced a certain amount of tearing, and left raw surfaces as did the curette, and much more force had, as a rule, to be employed with their use. In cases of missed abortion, it was more satisfactory to clear out the uterine contents, both to eliminate the risks of sepsis and to prevent subinvolution.

Dr. Scott McGregor spoke of the great friability of the uterine wall and the opening up of fresh surfaces as a danger in the use of the curette. He introduced and scraped with the finger and afterwards applied iodised phenol.

Dr. A. Rankin corroborated Dr. Stark's statement with reference to the use of curette in septic cases of incomplete abortion in one of the wards of the Samaritan Hospital for Women. In that ward the usual practice was thorough curettage, with douching, and the application of iodine liniment to the interior of uterus, again followed by douching. Iodoform gauze was then inserted through the cervix, but removed next morning, when the uterine douche was again used. After that, all that was required was vaginal douching till the patient left hospital. These cases invariably did well, and were discharged cured in from two to three weeks. Sometimes the temperature did rise one-half to one degree a few days after operation, but came down again in a day or two, when no further trouble arose.

In looking back over a period of some years, he could not recall any case of death taking place in the Samaritan Hospital after curettage for septic cases of incomplete abortion.

The cases Dr. Munro Kerr referred to, in which death took place after curettage, showed that this method of

treatment was not free from danger, but still in hospital practice, as shown in the Samaritan Hospital, the risks were not very great. The cases detailed by Dr. Munro Kerr might have been cases in which septic peritonitis or cellulitis might have been present before curetting was resorted to. In private practice the blunt flushing curette had been found very useful, and might obviate the danger referred to by Dr. Munro Kerr.

Dr. A. Miller said he prescribed opium and rest for the treatment of threatened abortion. The finger nail was not satisfactory in removing the uterine contents, and he often used the flushing curette in his private practice.

Dr. Jardine replied, and said he was pleased to find that some of the speakers did not agree with him in some of the points he had raised, and they had thus been favoured with different opinions, which was much more profitable than agreement. He had to confess that his experience of ergot had not been anything like Dr. Sloan's. In reference to recurrent abortions, he was quite aware that retro-displacements were frequently the cause, as he had seen a number, but as the discussion was on the treatment, and not the causes, he had not mentioned these specially. In recurrent cases disease or displacement was always at the bottom of the mischief. He had seen a case of eighteen recurrences.

In reply to Dr. Stewart's question as to why he plugged the vagina, he said that the plug controlled the hæmorrhage, stimulated uterine action, and caused dilatation of the cervix. The plugging had, of course, to be done properly. He would not use it more than twice. Iodoform gauze might be left in for twelve hours, but not longer.

He had not specially referred to septic abortions, as he knew some of the speakers would take up that point. He agreed with Dr. Munro Kerr that there was less risk in clearing out these cases with the finger than with the curette. Of course, fresh surfaces had to be opened up when anything adherent had to be removed, but to curette the whole uterine cavity in such cases added materially to the risk. He instanced two cases in which he had had to remove bits of adherent placenta after full-time labour, with sepsis present. In one he had curetted three weeks after the labour, and in the other removed the bit of placenta with the finger, and in both violent sepsis had occurred.

Dr. Kerr disagreed with him as to waiting until uterine

action occurred in missed abortions. One great difficulty was to make a definite diagnosis, and he cited a case in point. The patient had repeated hæmorrhage for two months, and to decide the condition of matters an examination under chloroform had been made. The uterus was enlarged and the ovum still in it, but whether or not the ovum was still alive could not be determined. He decided to wait, and the patient quickened in due time, and was delivered at full-time of a fine healthy son. Had he been hasty in emptying the uterus he would have made a very serious mistake. He also referred to a case reported by him last session, where he had diagnosed the death of the foetus at about four and a half months, and had advised waiting. The patient had gone to full-time in the enjoyment of good health, and the labour had come on in the usual way. No better result could have been got by interfering. Of course, on the slightest indication of anything going wrong he would interfere in these cases, but so long as everything was right he was inclined to wait.

Dr. Russell had stated that he considered that every case of abortion ought to be curetted, as it was impossible to make sure that everything was away. He entirely disagreed with that, as it was perfectly easy to decide the matter if the mass expelled was intact, and if not an exploration of the uterus with the finger would soon settle the point.

He agreed with Dr. Russell that too strict aseptic measures could not be taken in dealing with all cases. Happy-go-lucky methods were far too often adopted, and then men wondered where the sepsis arose from. The wonder was that so many cases escaped infection considering the careless way in which examinations were often made.

III.—SPECIMENS ILLUSTRATING THE CAUSES OF ABORTION.

BY DR. JOHN LINDSAY.

Dr. Lindsay demonstrated a series of specimens illustrating the causes of abortion.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING XVI.—17TH APRIL, 1902.

The President, DR. JOHN STEWART, in the Chair.

I.—CASE OF COXA VARA.

By DR. G. H. EDINGTON.

Dr. Edington showed a patient—a boy of 11 years—the subject of coxa vara. In a short statement, the history, symptoms, and treatment of this very uncommon complaint were in turn reviewed. Special reference was also made to the differential diagnosis from morbus coxæ.

II.—PROTEST AGAINST THE RECENT EDICT OF THE GENERAL MEDICAL COUNCIL.

The committee appointed to draw up a protest against the recent edict of the General Medical Council, with reference to the keeping of open shops or medical halls and the sale of poisons, gave the result of their deliberations. The following protest was submitted and unanimously approved of by the meeting:—

“JAMES ROBERTSON, Esq.,

“Registrar of the Scottish Branch of the General Council of Medical Education and Registration of the United Kingdom.”

“SIR,—We, the undersigned, in name and on behalf of the Glasgow Southern Medical Society, hereby protest against the notice of the General Medical Council to registered medical practitioners published in the *Glasgow Herald* of 14th December, 1901, as being unwarrantable, oppressive and vexatious.

(Signed)	“JOHN STEWART, <i>President.</i>
(„)	“DUNCAN MACGILVRAY, <i>Vice-President.</i>
(„)	“THOMAS FORREST, <i>Treasurer.</i>
(„)	“JOHN FRASER ORR, <i>Secretary.</i>
(„)	“ANDREW WAUCHOPE, <i>Editorial Secretary.</i>
(„)	“JAMES FORRESTER, <i>Member.</i>
(„)	“LACHLAN BURGESS, <i>Member.</i> ”

MEETING XVII.—1ST MAY, 1902.

The President, DR. JOHN STEWART, in the Chair.

**LIFE ASSURANCE EXAMINATION AND THE RELATION OF THE
MEDICAL EXAMINER TO THE COMPANY.**

BY DR. CARSTAIRS DOUGLAS.

In introducing his subject, Dr. Douglas made reference to the different kinds of life assurance companies at present in existence, and gave a description of the method by which such important businesses are conducted. Speaking with special reference to the relationship of the medical examiner of the company to the person about to be assured, he remarked that any statements made during the examination were presumably confidential, and no action for damages could legitimately be brought against the medical practitioner.

Dr. Douglas then spoke of the want of proper remuneration of medical examiners by assurance companies, citing, during his remarks, some glaring examples of the kind.

Important points in the course of the examination itself were next alluded to, the speaker dealing first, in a general way, with the different systems of the body. The different organs were then in turn reviewed, and, lastly, the importance to be attached to the presence of syphilis, glycosuria, and albuminuria, was discussed.

The paper was favourably criticised by many members, and, on the motion of the *President*, Dr. Douglas received the thanks of the Society.

MEETING XVIII.—15TH MAY, 1902.

The President, DR. JOHN STEWART, in the Chair.

**VISIT TO SANATORIA AND ORPHAN HOMES OF SCOTLAND AT
BRIDGE OF WEIR.**

Through the kindness of Mr. Quarrier, members had an opportunity of visiting the Consumption Sanatoria at Bridge

of Weir, Renfrewshire. There was a large attendance of the Society, and Mr. Quarrier personally conducted the party over the grounds and buildings. A close inspection was made of the more recently built sanatorium, given by friends in the East of Scotland, and which is appropriately named "The Door of Hope."

With regard to treatment at the sanatoria at Bridge of Weir, it was pointed out that the method employed was similar to that known as the "Nordrach" treatment, consisting of abundant supply of fresh air, generous diet, rest, and personal surveillance during residence. In all febrile cases rest in bed is strictly enjoined until the morning temperature is normal and the thermometer registers the evening temperature as less than a degree above the morning temperature.

The average residence for those discharged reached 141.9 days, and patients were admitted in all stages of the disease.

The results of treatment were most encouraging and satisfactory, 19 per cent being cured, 43.1 per cent relatively cured, 20 per cent greatly improved, 13.6 per cent improved, and 4.2 per cent being unchanged.

After having inspected the sanatoria, members also visited some of the orphan homes conducted by Mr. Quarrier, and were greatly interested, among other things, with the ship on land devised to train boys to be missionary seamen, and with the beauty and simplicity of the "Children's Cathedral." The sanatoria and orphan homes, which are supported entirely by voluntary contributions, are managed by Mr. Quarrier and an efficient staff, the sanatoria department being further approved of by a medical advisory board.

MEETING XIX.—29TH MAY, 1902.

The President, DR. JOHN STEWART, in the Chair.

A CIVILIAN SURGEON WITH THE ARMY IN SOUTH AFRICA:
RECORD AND IMPRESSIONS OF A YEAR'S SURGICAL WORK.

BY DR. ARCHIBALD YOUNG.

Dr. Young, in the course of his address, gave a detailed account of numerous surgical cases that came under his treatment. The lecture was illustrated by a large number of lantern slides.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING I.—16TH OCTOBER, 1901.

The President, DR. DAVID COUPER, in the Chair.

PRESIDENTIAL ADDRESS—"IDIOSYNCRASY."

BY DR. DAVID COUPER.

The President, in taking for his address the subject of idiosyncrasy, showed that it was a universal factor to be reckoned with by the physician, rather than an occasional phenomenon.

Consideration of the two great elements, heredity and environment, with careful and minute observation and study of the individual, and the amount and quality of his reaction to disease or to the action of drugs, would enable us to ultimately anticipate an idiosyncrasy, or even attempt some scheme of classification.

On the motion of *Dr. Young*, seconded by *Dr. Service*, *Dr. Couper* was accorded a hearty vote of thanks for his address.

MEETING II.—6TH NOVEMBER, 1901.

The President, DR. DAVID COUPER, in the Chair.

DISCUSSION ON THE "BRITISH PHARMACOPŒIA."

Dr. Service, in his paper introducing the discussion, said that the book under discussion is no exception to the rule that the preface to a book, though one of the most important parts, is not often read. Parts of the preface were quoted, showing that the book is intended for the use of "members of the medical profession and those engaged in the preparation of medicines." From the dictionary definition of the word *Pharmacopœia*, as given in *Ogilvie and Annandale's dictionary*,

he showed that the word refers to the preparation, use, and manner of application of drugs. This book—the *Pharmacopœia*—makes no reference whatever to the use and manner of application of drugs, and because of that, he looked upon the book as a signal failure, and as simply a book on technical chemistry.

Reference was made to resolutions passed by the Senate of Aberdeen University, and also of Edinburgh University, which would exclude their graduates from supplying to patients remedies which they prescribed. A book is printed by a council which has authority over medical men, and yet medical practitioners are not to be allowed to carry out the instructions laid down, and thus a part at least of the General Medical Council had shown marked inconsistency. He called attention to the fact that in the preface to the *Pharmacopœia*, two words, "matter" and "things," are printed in small letters, though in the Act they are printed in capitals. The legislature, he thought, must have looked upon these words as of some importance, yet the only other "matter" and "things" referred to in the *Pharmacopœia* are "characters and tests," which are not at all mentioned in the Act, and yet these occupy a ridiculously large proportion of the book. So far as the characters are concerned—roots, leaves, &c.—there is not much difficulty to those engaged actively in handling them, but when it came to tests he confessed he was staggered. The tests described could only be carried out in a fully equipped laboratory. Then, again, the tests by boiling point and test-tube differ from standard text-books—e.g., in the case of carbolic acid—certainly not much; still, when a book is published by authority, it should be accurate or not pretend to be a standard.

The Secretary read a letter from Mr. John M'Millan, pharmaceutical chemist, who was unable to be present, in which he stated that the *Pharmacopœia* had given great satisfaction to practical pharmacists. The scientific part of the book, he considered, was beyond all praise, but in the practical parts he had some suggestions to make. Syrup of ginger is now prepared from ginger and 90 per cent alcohol instead of tr. zingib. fort., which preparation, he thought, should have been retained. He was pleased to see that a formula for Easton's syrup, which Mr. M'Millan first prepared for the late Professor Easton, had been included in the *British Pharmacopœia*, though a formula might also have been given for the much prescribed syrup of the hypophosphites. Syr. rosæ and syr. hemidesmi might have been omitted, and also

syr. rhei, which was little used. He commented favourably on the simplification of the doses of tinctures, and on the standardisation of certain tinctures, and also the mode of preparation of tinctures generally. As trivial blemishes, he instanced the difficulty of obtaining fresh lemon and orange peels except at certain seasons. He was pleased that ung. paraffin had been included. Ung. hydrarg. nitratis was still an uncertain preparation, and the diluted ointment was unsightly. Ung. zinci should have had *oxidi* added to the name to show that it was not an ointment of the metal such as ung. hydrargyri. The wines and liquid extracts were reliable preparations, especially the latter. Glycerin of boric acid, he thought, was too thick; glycerin of belladonna was an important omission. With regard to the injections, with the exception of ergotin, they were little used by medical men, who preferred the tabloid form.

Dr. W. L. Muir questioned whether there were five men in this meeting who had a copy of the *British Pharmacopæia* and used it in making up preparations. He thought it was used in the form elaborated to make it a more reliable work, e.g., as *Squire's Companion*. He was not now conversant with the newer editions, but preparations made up according to the old editions often gave most unsatisfactory results. Better results were got by not slavishly following the *B. P.* It was, he considered, a book for druggists and not for medical men, not 1 per cent of whom could carry out the tests described. This book, for medical men, should have gone further than it does, and given certain therapeutic indications, such as are given in "Squire."

Dr. W. Findlay referred to the inconsistency of the General Medical Council in giving us this book, and now preventing us handling drugs at all. He did not think the *Pharmacopæia* should give the therapeutic uses of drugs, as that could be got from other sources. We were indebted, he said, to Mr. M'Millan for his criticism of the *British Pharmacopæia*, which, on the whole, was very satisfactory.

Dr. Black thought it would be absurd for the *British Pharmacopæia* to say anything about the uses of drugs. The doses being given, enabled the druggist to note a mistake in a prescription.

Dr. Lindsay Steven agreed with Dr. Findlay that we cannot look for the *Pharmacopæia* to give therapeutic uses of drugs, not because that belongs to the practice of medicine, but because in a matter of therapeutics any official statement would retard the progress of medicine. The publication of

the work might, he thought, be handed over to the pharmacists themselves.

Dr. Service, in reply, said the book might give some indication of the use of a substance, *e.g.*, hypnotic, astringent, &c. It does not carry out the dictionary definition of the word. The book is intended for us, and should be such as we can use legitimately.

MEETING III.—20TH NOVEMBER, 1901.

The President, DR. DAVID COUPER, *in the Chair*.

SOME RECENT OBSERVATIONS ON WORD-BLINDNESS.

BY DR. JAMES HINSHELWOOD.

In considering the subject of word-blindness, Dr. Hinshelwood remarked upon the number of cases of this kind which are not recognised, the subject being one on which little is said in the text-books, his monograph being, in fact, the first work on this subject in Britain or America.

In considering the act of vision, he pointed out that the brain contributes to sight quite as much as the eye; the sense organs may be perfect, but if the brain is defective the act of vision will fail to be accomplished. This cerebral aspect of vision had met with comparatively little attention. The distinction between recognition and perception was alluded to. In the act of recognition we compare objects in the visual field with objects in the visual memory. These functions are carried on in different areas in the brain. He considered that there were memory centres in the brain for words, letters, and figures. Clinical evidence showed the complete independence of the visual memories of words and letters, as in cases where the patient is able to interpret words, though not able to interpret the individual letters of which the words are composed, and this functional independence could only be reasonably explained on the assumption that these visual memories are stored and preserved in different, but probably contiguous, areas of the cerebral cortex.

Details of a case were given where the patient became word-blind, but not letter-blind, to printed matter, though his word- and letter-blindness was much more complete to written

than to printed characters. He was, however, able to read numbers, and groups of numbers, fairly well. He had also right lateral homonymous hemianopsia. This patient made steady improvement, and in three months all signs of the word-blindness had passed away.

An account of another case was given, where the patient, who became word-blind to English, was able to read Greek correctly; Latin, with many mistakes; French, not so well as Latin, but still much better than English, which he had to spell out letter by letter. Of the four languages which he knew, his word-blindness extended only to three of these. He read numbers easily and correctly, and also musical notes. He also wrote to dictation with difficulty, and with a good many mistakes.

Under antisyphilitic treatment this patient's word-blindness had disappeared within three months. The importance of thoroughly testing his power of reading all the characters and all the languages of which he was familiar was commented upon; the fact of his being able to read other languages, though not English, might otherwise easily have been overlooked.

With regard to prognosis, Dr. Hinshelwood said there were two classes of cases of word-blindness; first, those which recover more or less completely (cases where the function has been suspended by its blood-supply being cut off, *e.g.*, from pressure of a hæmorrhage, or occlusion of a vessel by thrombosis or embolism), and, secondly, those in which the lesion is a permanent one from destruction of the fibres leading to the centre.

As regards treatment, he pointed out that if spontaneous improvement is going to take place, it will show itself in a few weeks. If there is the slightest suspicion of syphilis, anti-syphilitic treatment should be pushed energetically—iodide of potassium in doses of from 20 to 30 grains thrice daily, with mercury, being given.

In the second class of patients he advised re-education of the patient, but this should not be begun too soon—not till all traces of active cerebral disease have disappeared.

In conclusion, cases of congenital word-blindness were referred to, where children, otherwise intelligent, had the greatest difficulty in learning to read, owing to defective development of the visual memory centre. The successful results obtained in educating these children should encourage us, even in the case of adults, to persevere in the re-education of the patient when the visual memory has been lost.

Dr. Miller Semple referred to a patient *Dr. Hinshelwood* had seen with him in consultation who was completely word- and letter-blind. Re-education had been begun fourteen months after the cerebral attack by making the patient learn the alphabet. After two months she was able to read small words in a child's primer.

Dr. John Patrick enquired if *Dr. Hinshelwood* had tested his patient with shorthand characters, and if any attempt had been made to make the patient use the left arm so as to stimulate the functional activity of the healthy side of the brain.

Dr. Hinshelwood, in reply to *Dr. Patrick's* suggestion, pointed out the difficulty of getting patients to change their lifelong habits. He had not tested his patient with shorthand, though that might be done with advantage.

REVIEWS.

A Short Practice of Midwifery. By HENRY JELLETT, B.A., M.D., F.R.C.P.I. Third Edition. Revised and Enlarged. London: J. & A. Churchill. 1901.

It is with great pleasure that we welcome the third edition of this short but most useful practice of midwifery.

The two previous editions of this work were written for both nurses and students of medicine. In this edition, however, *Dr. Jellett* has deleted all that was peculiarly applicable to the former, and made it a text-book for the junior student of midwifery. This, we think, is a very wise course, especially as the author has recently embodied what was of special importance to nurses in a short text-book for them.

It is unnecessary to give in detail the special features of *Dr. Jellett's* book. These have been already referred to by us in our previous review of the work.

In the present edition, the author has added four new chapters. These include chapters on "Pregnancy and its Phenomena," "The Ovum," and "Obstructed Delivery." These are discussed with the same clearness and conciseness as characterises all his writings.

Dr. Jellett has also added to the edition the report of the Rotunda Hospital for the last two years.

We know of no work of its size from which a better idea of modern obstetrics will be gathered than from Dr. Jellett's *Short Practice of Midwifery*. We again give it our heartiest recommendation.

Diseases of the Intestines: Their Special Pathology, Diagnosis, and Treatment. By JOHN C. HEMMETER, M.D. Vol. I. London: Rebman, Limited. 1901.

THE title of this book shows that it contains, in addition to the above, "sections on anatomy and physiology, microscopic and chemic examination of the intestinal contents, secretions, fæces and urine, intestinal bacteria and parasites, surgery of the intestines, dietetics, diseases of the rectum, &c." The section on "Anatomy and Histology of the Intestines" is written by J. Holmer Smith, M.D.; that on "Examination of the Fæces and Urine," is by Harry Alder, M.D.; and "Intestinal Bacteria," by W. Royal Stokes, M.D., all of Maryland University. Dr. Martin, Professor of Proctology, Cleveland College of Physicians and Surgeons, contributes the section on "Diseases of the Rectum."

A very full index of subjects and authors has been compiled by Dr. Skillman and Dr. Conser. The publishers are Messrs. P. Blakiston, Son & Co., and their work has been admirably done, the volume in our hands being handsomely got up, beautifully printed and illustrated, and, therefore, easy and pleasant to read.

Dr. Hemmeter states that he set out to accomplish the task of "furnishing the practitioner with a complete work from which he may readily instruct himself concerning the most approved and modern methods of diagnosis and treatment of intestinal diseases." All through the volume there is evidence of the fact alluded to by the author that "almost the entire modern literature on this subject has been gone over and systematised." The bibliography is excellent and remarkable, specially, for instance, the reference appended to the chapters on intestinal bacteria, and enteritis and colitis, amongst others. The volume contains an enormous amount of information, and the views expressed are certainly modern and up to date. We would say that probably the British practitioner has not yet got the length of fully appreciating, or almost even attempting, some of the methods of examination and treatment recommended. There is a strong German flavour about them. Some of them seem only possible to hospital physicians—for instance, parts of the chapter on

the methods and technics of diagnosis and that on duodenal intubation—but, certainly, the only objections to the methods are those that might be raised by the patient, and it is true that further advance in our knowledge must come along the lines of examination treated of by the author.

In Part I, the chapter on intestinal bacteria is specially clear and interesting.

Part II is concerned with the *rationale*, means, and modes of treatment, and the remarks on auto-intoxication and intestinal antiseptics are well worthy of perusal. The author sounds a welcome note of warning to those who adopt the theory of auto-intoxication too freely and indiscriminately, as seems to be the tendency in America as elsewhere. The author does not wish to rank as a disbeliever of auto-intoxication theories, but desires scientific proof, and states, in true American style, that the “doctrine thus far is devoid of most every objective proof.”

Part III is entitled “Intestinal Clinic.” This is a misnomer, the use of which we cannot understand. The contents of Part III are chapters on constipation, diarrhoea, colic, dysentery, &c., and a feature about them is that they contain hardly a record—just one, we think—of a clinical case. The term, in any case, seems to us an abuse of English—even of American English; for, in an American dictionary, we find “clinic” to mean “medical instruction given at the bedside, or in the presence of the patient whose symptoms are studied, and whose treatment is considered.” It is difficult, therefore, to conceive anything more unclinical than Part III of this book, and the adjective “intestinal” only confuses the more. This leads us to say that we have no sympathy with further, presumably American, efforts to parade new or unused terms—*e.g.*, obstipation for constipation. What reason or good can there be in this? Nor do we in the least care for the author’s invention of “dystrypsia intestinalis.” Why not stick to “intestinal indigestion?” and be done with it. No one wants to speak of “intestinal dyspepsia.” In the chapters of Part III there is more evidence than in the rest of the book of the need for pruning and condensing. There is too much repetition, and also a great amount of subdividing and classifying, which requires very careful attention; for instance, the classification of intestinal catarrh on page 435. There is in this chapter a special amount of repetition.

We are frequently, also, pointedly referred *back* to a chapter much later on in the book. There is a great deal of this; also of references to the author’s work on the stomach.

Errors in punctuation are fairly frequent, and a typical example of a confused sentence is found on page 220. Also, the following sentence on page 330—"The only sedatives which are used, to any extent, in the treatment of intestinal diseases are opium, morphin, and the alkaloids of opium, particularly codein and belladonna, with its alkaloid, atropin." Here we have the double confusion, from faulty construction, of morphin being presented as different from the alkaloids of opium, and of belladonna being equally an alkaloid of opium with codein. While careful revision can remedy many matters of this sort, it cannot remove from the mind some resentment at the spread-eagle fashion in which William and Herbert Allingham are included under the sentence—"In this country we have a talented array of rectal specialists." Are the Allinghams Americans? Or has the author not the slightest acquaintance with the life and works of those whom he quotes so readily?

The volume, however, as a whole, is very welcome, mostly to those who study the entire subjects dealt with. It is no book mainly for reference at the moment. It must be read as a whole, through and through, one would say, to be appreciated. And we think that the work has been done very well, though it would have been easy for Dr. Hemmeter to have done it better. Vol. II will be looked forward to with interest, especially the chapter on appendicitis, and that on diseases of the rectum, which, by the way, is by a "Professor of Proctology." But the reader must not permit himself to be annoyed by what seems pedantry, if nothing worse. And there can be no doubt that the owner of both volumes will have beside him an immense source of instruction.

The Accessory Sinuses of the Nose: Their Surgical Anatomy and the Diagnosis and Treatment of their Inflammatory Affections. By A. LOGAN TURNER, M.D., F.R.C.S. Ed. Edinburgh: William Green & Sons. 1901.

DR. LOGAN TURNER is to be congratulated on the publication of this volume. It is perhaps the most valuable addition to the literature relating to affections of the nose which has appeared during the past year. The author has had unusual opportunities for the compilation of such a work, and he has used the material placed at his disposal—chiefly by his father, Sir William Turner—to great advantage. Like many

another valuable monograph, this book had its origin in a lecture which was delivered before the Fellows of the Royal College of Surgeons of Edinburgh. The subject of that lecture was "The Illumination of the Air Sinuses of the Skull, with some Observations upon the Surgical Anatomy of the Frontal Sinuses." The subject matter of that, and of another communication, forms the basis of the volume, to which are added observations on the surgical anatomy of the maxillary sinuses, the ethmoidal cells, the sphenoidal sinus, and the communications existing between these cavities and the nasal chambers.

Practical interest has been added to the work by the inclusion of two chapters dealing with the diagnosis and treatment of the inflammatory affections of the nasal accessory sinuses, in which the present-day methods are well described.

The value of the work to the practical surgeon is greatly enhanced by the number of the illustrations, which, for the most part, are photographs of original dissections, and which very graphically depict the normal and the abnormal in the size, position, and shape of the accessory sinuses of the nose.

A Brief Manual of Prescription-Writing in Latin or English for the Use of Physicians, Pharmacists, and Pharmacal Students. By M. L. NEFF, A.M., M.D. Philadelphia: The F. A. Davis Co. 1901.

THE author, like many other teachers, has evidently, for a long time, recognised that the ordinary student of medicine has not a good knowledge of Latin, or what is still nearer the truth in many cases, has scarcely enough Latin to enable him to write a prescription, after the manner of the older physicians, some of whom are still among us.

This inability on the part of the student has suggested the necessity of this book, which, though the author disclaims all attempt to teach the Latin language as such, gives a good deal, and certainly all the rudiments necessary for prescription-writing, and enough to prevent the student laying himself open to a show of ignorance.

Such knowledge is essential as long as it is found convenient for us to have the names of our drugs and preparations in Latin. But Latin in prescription-writing should only be made use of to the extent of writing out the names of the

drugs in proper form, and, possibly also, if desired, the directions to the chemist.

The attempt, on the other hand, to give in Latin the ordinary directions, which are meant for the patient, is not only unnecessary, but unsafe. As far as possible a man should keep to the language which he really understands. Notwithstanding these views, however, the use of the present little book is evident, containing, as it does, all that is essential for correct prescription-writing.

A Text-Book of Pharmacology, including Therapeutics, Materia Medica, and Toxicology. By TORALD SOLLMANN, M.D. London: W. B. Saunders & Co. 1901.

THE massing of details in text-books dealing with therapeutics and materia medica is one requiring rare discretion in deciding how much matter should be included. The author has borne this in mind, and has adhered to his aim in discussing the physiological action of drugs, and of adducing scientific reasons for these actions, rather than the consideration of vague conflicting theories.

The first portion of the book is devoted to pharmacy, pharmaceutical methods, and the outline of toxicological analysis. The author has been able to find space for a notice of many of the newer remedies, as well as for notes upon many of the older drugs. The book, divided into four parts, is an attractive volume of over eight hundred pages, well printed on excellent paper, and the adoption of leaded and varied type has imparted a freshness and brightness of style. The diagrams and illustrations are numerous and appropriate, and the book is full of useful hints on modes of treatment and administration.

Chapter XVII deals very fully with the series of coal-tar derivatives, and it is shown that the action of the series agrees in a general way with that of quinine, the principal difference lying in the degree in which the different actions are exerted. In the antipyretic group, the principal effect is upon the heat regulating centre, and in the antiseptic group upon the protoplasm. So violent is it in the latter case, that it produces necrosis locally and collapse centrally. Quinine has both these actions in a less pronounced degree, producing its main effects by a mild paralyzing action on the protoplasm.

The section on serum therapy is concise and accurate, but is too brief for the growing importance of the subject. At the

same time, there are no traces of hurried work in the book—it is clear and forcibly written, never redundant, and, as a whole, its contents are well balanced, and arranged in a thoroughly methodical and logical manner.

The sections which refer to theories on the action of alcohol, and to its use in fever as a food; to the absorption of iron; to the action of drugs upon the heart; to the remote actions of acid and alkali, are specially worthy of mention, and show that no pains have been spared by the author to bring the work up to the standard of the most advanced therapeutics.

Part III embraces practical exercises in laboratory work with simple experiments, including work in chemistry and experiments on frogs and mammals.

Part IV is on the methods of analysing the causes of pharmacological actions.

Some portions of the work are fairly open to criticism, amongst which may be mentioned the remarks on the condition of the pituitary body in acromegaly (p. 317). The author states that the gland is usually found atrophied. Furnival has recently analysed thirty-four recorded autopsies. Changes were found in the pituitary gland in all, and in the majority there was hypertrophy or tumour. Dr. Pierre Marie says—"The most specific of these lesions, one which may be considered as essential, since it has not been found absent, is the considerable increase in the size of the pituitary body;" and in a case reported by Johnston and Monro (*Glasgow Medical Journal*, August, 1898), a sarcomatous tumour was found.

The author states on page 575 that no deleterious action has been demonstrated for either borax or boric acid in any quantities which would be likely to be used as food preservatives. We hold that the detrimental effect is not to be measured in this way.

It is almost ungracious to criticise an author's nomenclature, but we regard the literary form of this book to be decidedly marred by the liberty he has taken with the English language in dealing with some universally known clinical terms. It is one thing to be smart and brief in style, but this is altogether overdone when words are so altered in form, without regard to their derivation, that they become positively inaccurate in philology. We allude to terms such as feces, edema, anemia, toxemia, and leucemia. The style is one to be regretted, and not one to be emulated. Apart from these exceptions, we can heartily recommend the book as one that will be useful for study as well as for reference.

Records from General Practice. Part II. By J. KINGSTON BARTON, M.R.C.P.Lond., M.R.C.S.Eng. London: John Bale, Sons & Danielsson, Limited. 1901.

THE first article in this pamphlet is headed "Observations on One Hundred Cases of Midwifery." In it we learn that the forceps were applied in 24 cases (almost 25 per cent). The author blames the use of chloroform, which his patients seem to insist on having, for this excessive interference with what appears to be otherwise normal labours. Writing of the third stage, he states—"After waiting *ten to fifteen minutes*, I *always* pass two fingers (rendered aseptic) of the right hand up the vagina, following the cord, and more often than not the placenta is felt presenting at the os, if not already partially in the vagina. If this be so, I grip the fundus with the spread-out left hand, forcing firmly backwards and downward, pulling very gently at the cord at the same time. . . . If the fingers in the vagina feel no progress, I stop and wait patiently for the next uterine contraction, when the same manœuvres are carried out." Seeing that in all his cases he seems to carry out this method of interference with the third stage, and that he uses forceps in nearly 25 per cent of them, it is not to be wondered at that his patients are very much subject to post-partum hæmorrhage. Of the 100 cases, 3 had "very considerable" post-partum hæmorrhage, 34 "considerable," 38 "moderate," 19 "slight," 6 "very slight." There was no maternal death. We offer our congratulations to Mr. Barton on his results—not on his methods of treatment.

The other articles are—(1) On Drugs and Remedies, (2) Case of Penetrating Bullet-wound of Skull, (3) Case of Cerebral Disease, (4) Notes on Urine, (5) Case of Disseminated Cancer of Peritoneum, (6) Case of Hydatid Liver opening in the Left Pleura, (7) On Temperatures, (8) On Sea Voyages.

The Roentgen Rays in Medicine and Surgery. By FRANCIS H. WILLIAMS, M.D. New York: The Macmillan Co. 1901.

THIS work is intended as a report of the progress made in the use of the *x*-rays in medicine and surgery, with a chapter on their application to dentistry, and a recommendation for their use in the examination of foods and in the practice of veterinary surgery.

The author devotes himself at first to the *x*-ray equipment,

including a lengthened description of the various electrical machines, thus unfortunately cumbering a subject of so much interest with a vast amount of unnecessary tedious reading and study of technical illustrations, which we consider quite out of place in such a volume. The theory of the *x*-rays and their production has already been much better described in various smaller scientific works, in which the studies of light and the spectrum throw a fine glow of interest on the subject.

On the importance of the Roentgen rays in the diagnosis of thoracic diseases, the author, we think, wastes both time and space, since this means of diagnosis has long been acknowledged by physicians to be of little practical value. Phthisis, pneumonia, pleurisy, &c., can all be diagnosed by easier and more reliable methods than by such a scientific process, the results of which depend so much on intricate electrical machines, niceties of vacuum tubes, sensitive plates, and photographic chemistry.

Dr. Williams emphasises the value of this method of diagnosis as affording indications of pulmonary tuberculosis in the earlier stages of the disease, but his illustrations go far to strengthen our view of its inadequacy, and indicate that the work is from the hands of an enthusiast.

Whether or not he puts too little or too much value on the use of the *x*-rays in medicine, there can be little doubt of their immense importance in surgery, but, curiously enough, this forms the smaller section of the book, the illustrations in which outweigh the text to a great extent, though some of them do not reach the standard of those we have seen elsewhere.

Throughout the volume there are evidences of too much detail, case-citing, and needless illustrations, besides omissions of important practical hints and laws. Thus, in the chapter on calculi, we are told that the ease with which calculi can be recognised by the *x*-rays depends upon their size and chemical constituents. In an illustration (Fig. 385), the author endeavours to show the various degrees of translucency of the different kinds of stone, but he entirely omits to give any hints how to deal with the law in optics which teaches us that the size of an object and intensity of its shadow are in relation to the distance from the luminant and focal media, which we understand to be the chief difficulty in photographing renal calculi.

He further states that good negatives show the outlines of the soft tissues, such as the muscles, kidneys, &c., and quotes figure 387 as an example of a case of several renal calculi

occurring in a kidney, but we confess our inability to discern such differentiation of tissues, or to see the calculi, a circumstance which strengthens our belief that this process of diagnosis in its present stage would not commend itself as very reliable.

The best and most interesting part of the book is the chapters on the therapeutic uses of the x-rays, where the reader will find the works of many medical scientists chronicled. We must, however, recognise the evident pains which Dr. Williams has taken in the general production of the volume, which also reflects much credit on the publishers.

Atlas and Epitome of Special Pathologic Histology. By Doцент DR. HERMANN DÜRCK. Authorised Translation from the German. Part II. Edited by LUDWIG HEKTOEN, M.D. London: W. B. Saunders & Co. 1901.

THIS volume, which is one of the excellent hand atlases at present being issued by Messrs. W. B. Saunders & Co., is the second of a series of three volumes dealing with special and general pathology by the same author. It deals with the pathological histology of the liver, urinary and sexual organs, nervous system, muscles, skin, and bones in the order mentioned, which, by the way, is not quite that indicated on the title-page. The first three sections—those dealing with the liver, urinary, and sexual organs—are very complete, and characterised by tolerably full descriptions of the various morbid appearances. The relatively smaller section dealing with the nervous system (extending only to twenty pages of text, exclusive of the coloured plates) is explained partly by the omission of descriptions of the distribution of pathological changes in the systemic diseases of the brain and cord, and partly by the fact that tumours of the nervous system are dealt with in the forthcoming volume on "General Pathologic Histology." The coloured plates in a work of this kind are of very great importance, and it may at once be said that, considering the moderate cost of the work, the accuracy with which the tints of various methods of staining have been reproduced, as well as the careful attention to detail apparent in the presentations of structure of different organs and tissues, is worthy of all praise. The plates, however, might have been, in a greater number of instances, inserted to face the text dealing with the subjects represented.

The work of translation has apparently been carefully

carried out; indeed, the text is remarkably free from evidence that the work is a translation from the German.

No errors of any importance have been detected in reading the work. The substitution of "epithelial" for what should evidently be "epithelioid," however, on page 51, is misleading. Some objection may also be raised to some of the terms and expressions used. Thus, "amyloidosis," indicating a general amyloid change, and "bacteriemic" as an alternative term for "pyæmic" and "septicæmic," appear unnecessary, while "suppurative pylethrombophlebitis" (p. 25) and "small mononuclear lymphocytes" (p. 129), are tautologous. The expression "connective tissue triangles about the portal, hepatic and biliary canals" (p. 35), though sufficiently definite, describes only an occasional microscopical appearance of the portal connective tissue with the structures proper to it. It need scarcely be added that the American mode of spelling is adopted throughout, and such words as "leukocytes," "amebæ," "anemia," &c., occur frequently.

The book is one, however, which should prove exceedingly useful, not only to the medical student, but to the more advanced morbid histologist, as references to recent papers of importance are scattered throughout the text dealing with subjects whose histogenesis is not definitely settled.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By JOHN PATRICK, M.A., M.B.

A Case of Gangrene following Scarlet Fever.—R. Seubert, of Mannheim (*Münchener med. Wochenschrift*, No. 2, 1902), reports this case in a child, 7 years of age. It had been a slight attack of scarlet fever, and, after desquamation, a sudden swelling of the whole of the left leg, with patches of purplish discolouration of the skin, took place. Complete gangrene rapidly followed. The leg was amputated, and the large vessels were found to be blocked with purulent thrombi; the muscles were yellow in colour, and permeated by a thick muddy fluid. Streptococci were found in the blood. The patient made a good recovery.

Recurrence after Winkelman's Radical Cure of Hydrocele.—Emil Gückel (*Centralblatt für Chirurgie*, No. 6, 8th February, 1902) recalls a recurrence reported in November, 1901, by Lauenstein, and adds another case, which is the only recurrence of the hydrocele in seventeen consecutive

cases in his practice. The patient was 5 years old. The hydrocele had been present for a year, and was as large as an egg. On 20th April, 1901, Winkelmann's operation was performed—eversion of testicle, insertion of three sutures in the retroverted tunica behind the testicle, accurate closure of skin wound. The wound healed by first intention, and the patient was dismissed in eight days. On 23rd June, he returned with a new hydrocele of the same size as the first. The same operation was performed, and the patient dismissed in ten days. No explanation of the recurrence can be given by the operator.

Surgical Intervention in Ascites due to Cirrhosis of the Liver.—G. Pascale and F. Lastaria (*Centralblatt für Chirurgie*, No. 12, 22nd March, 1902). The former of these authors puts the thesis in the form of three questions—

1. Is it possible to provide through the blood-vessels of the omentum an exit for the portal blood, and how may this best be accomplished?

2. Is such a removal of the liver from the circulation attended with danger to the organism as a whole?

3. Will the functions of the liver be thereby injured?

In answering the first question the author found, by experiment on animals along with clinical and pathological observations, that in the neighbourhood of the linea alba, the collaterals developed most sparingly, as the greater part of the omentum fixed there became fibrous. On the other hand, the new formation of blood-vessels progressed much more rapidly where the omentum came into contact with subperitoneal and muscular tissues. As clinical experience taught that, in cases of cirrhosis of the liver, the collaterals developed in the neighbourhood of the umbilicus, Pascale recommends the following operation:—Median laparotomy in the umbilical region, with excision of the umbilicus; removal of the ascitic fluid and examination of the liver; removal of the parietal peritoneum and the deep fascia from the posterior surface of the abdominal muscles for a distance of a few centimetres around the wound. The omentum is then spread out, and two or three centimetres of it are fixed by deep stitches under the umbilical region and towards the sides as far as possible from the wound. Thereafter, the peritoneum is freshened with the spoon, or by friction with a gauze sponge. The abdominal wound is closed, so that the omentum is fixed in the middle over against the line of sutures. By means of this extensive contact of the omentum with the anterior abdominal wall, and especially with the muscles in the umbilical region, a rich vascular development is assured.

In attempting to answer the second question, Pascale ligatured the portal vein and the inferior vena cava of dogs at varying periods after performing the anastomosis operation. The animals all died. The experiments were not absolutely useless, inasmuch as the author considers that they proved that the diversion of the portal blood direct into the venous circulation produces no toxæmia.

To his third question, the author cannot offer any answer.

Pascale gives a list of fourteen cases operated on by the method described, where healing by first intention took place, and where the collateral circulation developed promptly. Only nine of these cases have been long enough under observation to warrant the drawing of conclusions. Three of them only showed real improvement in the patient's condition. In spite of the apparent failure of the operation in the other cases, Pascale advocates it on the ground that it is not a dangerous operation, and that it should be done as early as possible after a diagnosis of ascites from cirrhosis of the liver is arrived at.

Lastaria, the second of the authors, strongly advocates the claims of the method. His operation technique is as follows:—A median incision is made in the abdominal wall, and, with a sharp spoon, the dome of the diaphragm and the neighbouring convexity of the liver are refreshed, a similar procedure being adopted with the spleen. The serous surfaces of the stomach and bowel are rubbed with a gauze tampon soaked in sublimate lotion (strength not

stated). The omentum is then unfolded and stitched to the peritoneum. The results of the operation are not given.

The Surgical Treatment of Ascites.—H. Ito and K. Orni (*Deutsche Zeitschrift für Chirurgie*, quoted in the *Centralblatt*, No. 15, 12th April, 1902) report their results in five cases of cirrhosis of the liver occurring in the hospital at Kyoto, Japan. Laparotomy was performed, and the omentum stitched to the parietal peritoneum refreshed with the sharp spoon. In one of the cases, the sharp spoon was applied to both liver and spleen, on the one hand, and to the parietal peritoneum, on the other, to bring about union. With one exception, the results were bad. Case 3 lived for five days, and Case 5 for four days after the operation. Case 4 died four and a half months after the operation, but with rapid return of the ascitic fluid, which had more than once to be removed by tapping. In Case 1, the cirrhosis was malarial in origin. The patient had no return of the ascites, but there were repeated febrile attacks, and he died in three months with hæmorrhagic diathesis. Only the patient in Case 2 found himself, after the operation, in tolerable health. He was a poorly developed boy, of 13 years, who had had for three years palpitation and dyspnœa on exertion, with night sweats and emaciation. There was some cervical adenitis, and, in his right apex, a suspicious lengthened expiration. The liver was enlarged with sharply defined edge, the veins over upper part of abdomen were dilated, the presence of ascites was not certain. At the operation, the liver was found to be nodulated and hard, the spleen enlarged, and a moderate degree of ascites. The wound healed well. Ten months after the operation, the patient's medical attendant reported that the boy was doing well, and that there was no ascites; the dilated abdominal veins were much reduced in size.

The authors regard the success of this case as due to the early performance of the operation, undertaken as it was in the pre-ascitic stage of cirrhosis of the liver.

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

Blood-counts in the New-born.—Dr. John Aitken contributes an article on this subject to the *Journal of Obstetrics and Gynæcology of the British Empire* (April, 1902). The paper is the result of a series of examinations of the blood of the new-born, carried out in the Glasgow Maternity Hospital; there is added a bibliography of recent literature. The author's conclusions are—

1. The red corpuscles in the blood of the infant at birth are relatively more numerous than in the adult. During the first forty-eight hours the blood becomes more concentrated and the child loses weight; from that time to the tenth day the red corpuscles increase, the child gains weight. The blood shows variations in shape, and deficiency in rouleaux formation. Nucleated red corpuscles are present at birth, normoblasts and megaloblasts. They are found as late as the ninth day.

2. The hæmoglobin is relatively high at birth, and, during the few succeeding days, usually over 100 per cent, the individual cells being richer than in the adult.

3. The white corpuscles at birth are two or three times as numerous per cubic millimetre as in the adult. They increase in numbers during the first few days from the effects of digestion; by the tenth day, these are less numerous than at birth. Digestion leucocytosis is well marked. The lymphocyte percentage usually exceeds that of the neutrophiles at birth. After the first feeding, there is a relative and absolute increase in the

neutrophiles. In the second week this passes off, and the lymphocytes are increased as at birth. The percentage of eosinophiles is greater than in the adult blood.

Tuberculosis of the Cervix Uteri and Infection therefrom through Intercourse.—Dr. Glockner reports a case of this in the *Beiträge zur Geburt. und Gynäk.*, vol. v, quoted in *Centr. f. Gynäk.*, No. 14, 1902. The patient was a nullipara, aged 29. On the cervix was found a tumour of the size of a walnut; it was soft, spongy and villous, appearing to involve both lips of the cervix. The right fornix was involved. The mass was removed and the stump seared with the cautery, and the uterus was then removed. On microscopic examination the tumour was found to be tubercular, with bacillus and giant cells, and, in parts, caseation. The upper cervical mucosa and the whole of the uterus and appendages were free from disease. The husband had a tubercular orchitis, which the author ascribed to infection from the wife. Tubercular disease of the cervix may clinically and macroscopically simulate all the features of malignant disease; only by a very careful histological examination can a diagnosis be made.

On the Reflex Relations between Mammæ and the Genitals.—Dr. Pfister contributes to the *Beiträge zur Geb. und Gynäk.*, vol. v, quoted in *Centr. f. Gynäk.*, No. 14, 1902, a paper on some observations on this subject. He verified Scanzoni's observation that premature labour may be induced by sucking the nipples. He excited the nipples, by a simple exhaustor working like a cupping glass, in three cases, and thinks that with very sensitive women this method will usually succeed. In observations on a hundred puerperal women he found that, by putting the child to the breast, a uterine contraction was excited in from two to four minutes after the child began to suck. In half a minute the uterus is stony hard, and remains so for two or three minutes before passing back to its original condition. If the sucking is continued, the next pain occurs in about five minutes. With the progress of involution the contractions are less marked, but can still be observed at the eighth day. To test the influence of nervous supply on the mammary gland, he isolated the mammæ by dividing the long thoracic nerves and intercostals in rabbits and guinea-pigs, and found that it made no apparent difference in their function. This is in accordance with the result of Ribbert's transplantation of mammary glands. As regards uterine contractions, experimental excitement of the nipples gave negative results in rabbits.

The Occurrence of Milk-sugar in the Urine of Nursing Women, with a Note on the Best Means for its Differentiation from Grape-sugar.—Dr. Carstairs Douglas contributes an article on this subject to the *Scottish Medical and Surgical Journal*, March, 1902. The author had been several times asked to determine whether the deduction of Fehling's solution in the urine of nursing women was due to glucose or to lactose. He accordingly made a careful investigation of the subject, and examined the urine of fifty-six nursing women. Most of these were primiparæ, and in 85 per cent he found lactose present. The observations were chiefly made between the third and the seventh day, but the urine continues to contain lactose for several days after nursing has been stopped. If the urine is not obtained by catheter, and is contaminated by lochial discharge, Allen's method is the most satisfactory test for sugar. Seven c.c. of urine are boiled in a test-tube, and 5 c.c. of the cupric acetate part of the Fehling's solution at once added. A precipitate occurs. After the fluid has cooled, add 2 c.c. of a saturated solution of sodium acetate containing a trace of free acetic acid. A further precipitate is deposited, and, on filtering, a greenish-blue fluid is obtained, to which 5 c.c. of the alkaline tartrate part of the Fehling's solution is added. The whole is then boiled for fifteen seconds. The orange-yellow precipitate of cuprous oxide at once separates in the presence of one part of sugar in five hundred, or less. If the urine is obtained uncontaminated,

Fehling's and Trommer's tests and nitro-propiol (nitro-phenyl-propionic acid) are all good tests for the presence of sugar, but these do not differentiate glucose and lactose. Yeast ferments glucose, but not lactose, or, if at all, it does so to a very small extent. The phenyl-hydrazin test has never, in the author's hands, produced crystals of lactosazone. Accordingly, these two tests are useful in a negative way. Rubner's lead test was not found suitable with solutions in urine, though useful in pure solutions. The author sums up by saying that, if a urine responds fairly well with Fehling's solution, but does not yield any crystals with phenyl-hydrazin, and does not ferment except very slowly with yeast, it may be considered with practical certainty to contain lactose.

Pelvic Deformity and the Choice of Operation.—In *L'Obstétrique*, March, 1902, Paul Bar discusses this question specially in relation to the moral justification of embryotomy of a living child; and, in the May number of the same journal, the question is discussed at length in relation to the mutual obligations of the patient and practitioner. Dr. Bar defends the practice of inducing premature labour as an operation of election where the conjugate is $3\frac{1}{2}$ inches or more. His paper is in large part a reply to Dr. Pinard, who lately published an article in the *Semaine Médicale* (supplement, 4th December, 1901) entitled "Fœticide," where he absolutely condemns the induction of premature labour and the operation of embryotomy of the living child. Pinard goes so far as to say that the close of the nineteenth century has seen the disappearance of that opprobrium of science, craniotomy on a live child, and that no one now has the courage to justify it. Bar replies that, within the limits laid down, induction of premature labour gives as good results to the children and is safer to the mother than symphysiotomy. As to craniotomy, he still thinks it justifiable. Cæsarean section may be easy, but it is dangerous, and requires to be performed with aseptic surroundings by skilled hands; it can give good results only if done before, at the beginning, or soon after the onset of labour. We may remark that the experience in the Glasgow Maternity Hospital bears out that point. Bar absolutely condemns the Cæsarean section in cases brought into hospital after the mother has been long in labour, and where septic infection is already probable from attempts at extraction with forceps. As regards symphysiotomy, it, too, is contra-indicated where the woman has probably already a septic infection. Again, where the child is still alive, but obviously is beginning to sink under the pressure of the prolonged labour, the chances of saving the child are so small as not to justify one in exposing the mother to the risks of symphysiotomy, for the risks are real, and the after-results by no means always good. Up to January, 1890, in the Clinique Baudelocque, there had been 100 symphysiotomies, with 12 maternal and 13 fœtal deaths. In 1900, of 8 symphysiotomies, one mother died and two children. Dr. Bar goes on to show that his total results are as good as Pinard's; and, as to general rules, he considered Cæsarean section and symphysiotomy scarcely justifiable operations in the usual surroundings of private practice. He finally advises his students to pay more attention to their patients during pregnancy; by this means, many cases of craniotomy might be avoided.

In his second paper, Dr. Bar gives as his text the statement that under no pretext is it justifiable to perform an operation on a woman without warning her, and without having obtained her consent. The question has been discussed by the Committee of the *Assistance Publique* of Paris, and from the legal side in a paper by M. Maxwell, published in the *Semaine Médicale*, 30th October, 1901. M. Maxwell goes so far as to say that, if the case is so urgent that the practitioner cannot hand over the case to some one else, he is bound to carry out the desires of the woman in labour, even if it be an operation involving the death of the child. Dr. Bar lays down a series of propositions after discussing the various points. The obstetrician who has decided on an operation must tell the patient of his intention, but in such a way as to obtain her confidence. She is not in a position to weigh the

obstetric questions involved, but a practitioner is not justified in preferring Cesarean section to induction of labour without warning the patient at a time when the choice is still open. If the mother refuses her consent, the obstetrician cannot operate in spite of her. In France, at anyrate, the law is quite clear on that point. If the patient refuses her consent and demands another operation, the obstetrician must acquiesce, unless he does not consider the operation justifiable, in which case he must abstain. If the woman has the use of her judgment, she alone must decide; if she has not, the choice must be with the husband or other members of the family, according to M. Maxwell; but Dr. Bar disputes this. M. Maxwell suggests that there are cases where the husband and the rest of the family might disagree, and that the obstetrician is bound to side with those who prefer the operation least dangerous to the mother. Dr. Bar thinks otherwise, and that the choice should lie with the obstetrician, and that he must not be concussed into doing an operation against his better judgment.

DISEASES OF THE EAR.

By DR. WALKER DOWNIE.

Discussion on Deafness and Ear Disease in School Children.—An important and interesting discussion took place at a special meeting of the Otological Society of the United Kingdom on 14th April, 1902, on Dr. Cheatle's "Report of an Examination of the Ears of 1,000 School Children between the Ages of Three and Sixteen Years in the Hanwell District School."

The object for which the examination was undertaken was to ascertain what proportion of children suffer from diseases of the ear, in order that attention might, if necessary, be drawn to the subject; and that, as so many of the dangers to life and hearing have their origin in childhood, means might be taken to guard against them during that period of life.

In conducting the examination, each child was placed 18 feet away, and simple questions in a quiet whisper were asked—(1) With both ears unclosed and the eyes shut; and (2) with one unclosed ear turned towards the examiner, and then the other. After the results were noted, the ears, nose, pharynx, and, in a large number, the naso-pharynx, were examined.

In the 1,000 children examined, the *hearing* was found to be more or less deficient in 520—that is, that with one or both ears they were unable to pass the whispered voice test at 18 feet. Slight *abnormalities* of the auricle were found in 3 cases.

In 18 cases *foreign bodies* were found in the ear, and in these the children, 12 of whom were girls, were unaware of their presence.

In 1 case numerous *hemorrhagic spots* were seen on the left tympanic membrane, and the boy explained that he had received a blow on the ear immediately before examination.

There were very few cases of *acute middle-ear inflammation*, but there were 166 cases whose deafness was due to *indrawn membranes*, and of these 141 had adenoids.

Sclerosis was observed in six cases, all of whom were females; and 88 children were found to be suffering from *chronic suppuration* of one or both ears. While six of these required the complete post-aural operation performed at once, curetting and ossiculectomy were required in many; 71 had adenoids, and all had not only deficient hearing, but were, from the nature of the lesion, in danger of their lives.

One case only of *internal ear deafness* was met with. Particulars of the various conditions and combinations of conditions, with the results as affecting

the ears, will be found in the paper; but it is interesting to note the very definite association between depressed membranes with deafness and adenoids, as also the association of adenoids with ear disease—434 children out of a total of 1,000 had *adenoids*, and of these some aural trouble was present in 394.

Dr. Cheatele asks the question—"Should something be done by the authorities in the matter?" and he thinks it is a subject which they cannot afford to neglect.

He recommends that the systems employed in Germany, Switzerland, and Sweden should be investigated and reported upon, and thinks the method adopted by Germany, as it deals with a large population, would be most applicable. There physicians are appointed to the schools to examine chiefly the eyes and ears, and to see that treatment is applied when necessary. There is a movement in Holland to have doctors appointed to the schools to investigate the hearing power of children; and the Town Government of Stockholm last year appointed two aurists to examine all the poor school children.

George Murray, M.R.C.S., at the same meeting made a report of an examination of the ears of 400 school children, and this, together with Dr. Cheatele's paper, was discussed by many members, after which it was agreed—"That a committee consisting of the president, the secretaries, and three other members of the Society, be appointed to draw up recommendations anent a compulsory examination of the hearing-power of school children, such report to be presented at an early meeting of the Society for subsequent transmission to the school authorities."

Books, Pamphlets, &c., Received.

- Medical Lectures and Aphorisms, by Samuel Gee, M.D. London: Smith, Elder & Co. 1902. (6s.)
- Introduction à l'Etude de la Figure Humaine, par le Docteur Paul Richer. Paris: Gaultier, Magnier et Cie. 1902. (10 francs.)
- Heresies, or Agnostic Theism, Ethics, Sociology, and Metaphysics, by H. Croft Hiller. Vol. V. London: Grant Richards. 1902.
- International Text-Book of Surgery, Edited by A. Pearce Gould, M.S., F.R.C.S. Vol I: General and Operative Surgery. 458 Illustrations and 9 Lithographic Plates. London: W. B. Saunders & Co. (21s. net.)
- A Practical Treatise on Smallpox, Illustrated by Colored Photographs from Life, by George Henry Fox, A.M., M.D. In Two Parts. London: J. B. Lippincott Company. 1902. (12s. complete.)
- A Practical Treatise on Diseases of the Skin, by John V. Shoemaker, M.D., LL.D. Fourth Edition, Revised and Enlarged, with Chromogravure Plates and other Illustrations. London: Henry Kimpton. 1902. (21s. net.)
- The Diagnosis of Surgical Diseases, by Dr. E. Albert. Authorised Translation from the Eighth Edition, by Robert T. Frank, A.M., M.D. With 53 Illustrations. London: Henry Kimpton. 1902. (18s. net.)
- Clinical Essays and Lectures, by Howard Marsh, F.R.C.S. London: J. & A. Churchill. 1902. (7s. 6d.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 21st JUNE, 1902.**

	WEEK ENDING			
	May 31.	June 7.	June 14.	June 21.
Mean temperature, . . .	50·6°	53·6°	50·4°	52·3°
Mean range of temperature between day and night, . .	15·9°	17·1°	13·9°	14·4°
Number of days on which rain fell,	5	5	5	3
Amount of rainfall, . . ins.	0·32	0·60	0·40	0·16
Deaths registered, . . .	307	308	303	270
Death-rates,	20·6	20·7	20·3	18·1
Zymotic death-rates, . . .	2·1	1·7	2·5	1·8
Pulmonary death-rates, . .	6·4	6·4	6·4	5·0
DEATHS—				
Under 1 year,	39	61	49	53
60 years and upwards, . .	67	71	52	65
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	8	7	10	7
Scarlet fever,	1	1	2	1
Diphtheria, . . . . .	...	...	2	1
Whooping-cough,	14	13	13	4
Fever,	2	1	2	...
Diarrhoea,	6	4	9	13
Croup and laryngitis, . .	2	...	3	1
Bronchitis, pneumonia, and pleurisy,	72	65	68	54
CASES REPORTED—				
Small-pox,	1	...	2	1
Diphtheria and membranous croup,	12	8	5	11
Erysipelas,	30	16	19	15
Scarlet fever,	33	39	44	43
Typhus fever,	3	...	...	2
Enteric fever,	10	16	11	15
Continued fever, . . . .	...	1	...	...
Puerperal fever, . . . .	...	2	3	2
Measles,*	122	146	127	140

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

No. II. AUGUST, 1902.

ORIGINAL ARTICLES.

RECENT ELECTRO-THERAPEUTIC WORK IN
MEDICINE AND SURGERY.¹

By JOHN MACINTYRE, M.B., F.R.S.E., F.R.M.S., M.I.E.E.,

Surgeon for Diseases of the Nose and Throat, (Glasgow Royal Infirmary ;
Lecturer on Diseases of the Nose and Throat, Anderson's College Medical
School ; President, British Laryngological Association ; Editor of
the *British Journal of Laryngology, Rhinology, and Otology* ;
Ex-President, London Roentgen Society.

ON more than one occasion in the past I have had the honour of giving a demonstration to the members of the Medico-Chirurgical Society of Glasgow upon the subject of *x*-rays and other waves in ether which have attracted the attention of physicians and surgeons, in as far as they proved useful in the diagnosis of affections of both hard and soft tissues. To-night I intend to show some lantern slides and apparatus by way of demonstrating the therapeutic value of the same forces. Amongst these are the *x*-rays, and many others long familiar to us, but all of which are believed to be some form of transverse wave or waves in ether.

Professor Roentgen's historical and sensational discovery has long ceased to be a novelty, yet comparatively few people

¹ Demonstration to the Glasgow Medico-Chirurgical Society, 21st February, 1902.

in the early part of the year 1896 could have foreseen the enormous amount of research which followed it, whether in the physical laboratory or at the bedside. Not that we attribute all recent therapeutic work in this direction to this great discovery: on the contrary, I hope, before the evening is advanced, to show that the work of Finsen had previously been carried out independently and with great success in the therapeutics of skin affections. Further, Tesla's great work preceded Roentgen's, and, thanks to the application of his methods by Dr. Arsonval, the profession has become familiar with the application of high-frequency currents in medicine. What is of particular value, however, is the interest which has followed Roentgen's discovery, not only in connection with the *x*-rays themselves, but in many new forces closely related to them: because, thanks to the work of Becquerel, the Curies, Russell, and others who have added much to our knowledge by demonstrating the existence of radiations emanating from many hitherto unsuspected substances, the possibility of therapeutic results from new sources becomes daily more evident. As a result, it may be safely said that just as at the beginning of 1896 it was impossible to foresee what has already taken place, so it is now as difficult to predict how far-reaching may be the results in the future.

In order to accomplish as much as possible during the limited time at my disposal, I shall arrange the demonstration so as to include, firstly, a reference to some of the principles of physical science upon which this work is founded: secondly, many forms of apparatus required for different methods of treatment, and, in dealing with the latter, I shall try to indicate the pathological conditions most suited for each method; thirdly and lastly, the results so far as they have been obtained.

First of all, then, dealing with the principles involved, I will throw the ordinary spectrum of light upon the screen, showing the different colours with which we are all familiar, from the red at the one extreme to the green and on to the violet, and, further, into that region which has been so long known to us as ultra-violet. To begin with, therefore, we believe that the different conditions are due to differences in the transverse waves in ether, all of these colours being present in what is known as white light, and easily separated by means of the prism. We now believe, however, that many other waves at each end might be drawn in or represented in addition to the spectrum, and if we do not demand too strict adherence to analogy we might compare these in some way with the key-

board of the piano, and think of waves in ether as in a similar way being related to each other as we pass from the extreme left or low notes of sound on the one hand, to the highest notes on the other. For this reason I will throw now upon the screen a diagrammatic spectrum (Fig. 1) in which the first one I showed takes its place with the others. Some of these will be seen to be away octaves, as it were, beyond the violet rays, while others will be seen to the left of the red. The diagram represents in a way a relationship in size and

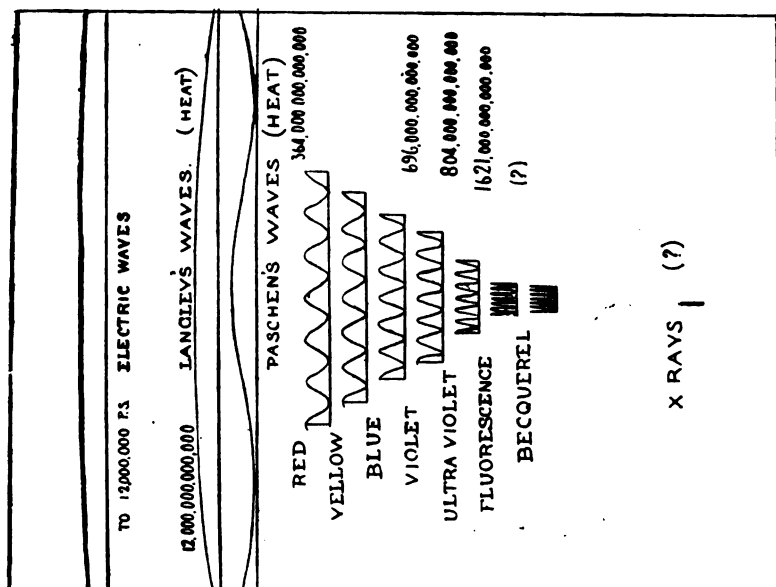


FIG. 1.

Diagrammatic representation of different waves in ether to the right and left of the ordinary light spectrum and including this.

frequency which the waves bear to each other, and the figures represent the number of vibrations per second.

As we pass from left to right we have represented the electric and magnetic waves, heat waves, red, green, violet, and ultra-violet rays; beyond these such radiations as those described by Becquerel and others, and far away to the extreme right we find the *x*-rays, that is, assuming them to be really transverse waves in ether. Be it noted here that we are far from being able to make up a complete spectrum, and

you will notice great gaps of which we know nothing; even in regions such as the electric, magnetic, and heat the classification is not nearly as complete as we know it in connection with light waves (Fig. 2).

Much yet remains to be done in the physical world of science, but in view of the magnificent demonstration of Hertz in connection with Clark Maxwell's theory of electric waves, there is much room for hope. Imperfect and all, however, as our knowledge is at present, it is clear that we have recently had many new forces registered, all worthy of further consideration, whether viewed from the diagnostic or therapeutic standpoint, and as a result of the employment of some of these at least, satisfactory results have already been obtained.

In studying these different forces it will be found that some possess one or more properties not possessed by others, such,

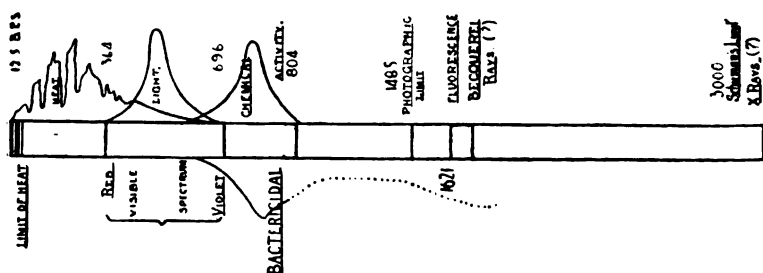


FIG. 2.

Diagrammatic representation of waves in ether used in medicine for diagnosis or therapeutics.

for example, as polarisation of light in electric waves; absent in others such as *x*-rays. On the other hand, many of them possess properties in common, such as the action on a photographic plate, a property possessed by *x*-rays and radiant matter, demonstrated by Crookes; and long ago Abney was able to photograph objects by means of heat alone. And so we find that many of these forces seem to possess properties which, if they be not the same, resemble each other in their therapeutic actions when applied to diseased tissues. We have long been using electric currents, more or less scientifically, it is true, and every physician is acquainted with the action of heat from long and well-known familiar methods. We are all believers in the recuperative and beneficial actions of light, so that we have been employing such radiations for long before the days of D'Arsonval's work, or the new apparatus

for radiant dry heat, or Finsen's artificial light, which, with radiant matter and x -rays, forms the subject of to-night's demonstration.

We now come to the question of theories involved in therapeutic actions. For the most part these are theoretical, although there are few who would be inclined to disbelieve the statement that some waves destroy organic life or retard its growth, and in this connection the researches of Downs, Blunt, Marshall Ward, and others deserve our great recognition. These results have been proved by the effects upon cultures. In passing, here it may not be out of the way to remember how different is the action in cultures as opposed to that upon organisms buried in the deep tissues. Our difficulties are not lessened by reflecting upon the results of workers with the x -rays; some of them have found that they may not destroy, but actually stimulate the growth of organisms. Those who believe in this view of the question seek for, and attribute the results to, bactericidal action, but there are others who fall back upon the older idea that the tissues themselves possess the power of destroying pathogenic micro-organic life, and that these radiations in some way or other stimulate these.

Passing to the consideration of the different forces now employed in medicine, I shall, first of all, take up very briefly that class with which Crookes, Becquerel, the Curies, and Russell have made us familiar. It may be said that substances have already been tried therapeutically which are known to give off radiations, say, in skin affections. They have been dusted on the affected parts, but the results obtained so far are not well known. In this connection, however, we cannot but think of the many substances which are used therapeutically as antiseptics, and when doing so ask ourselves the question, how are these substances acting? May the results not be due to radiations, in some instances at least? In the past we have been content to describe them as "chemical," "stimulating," "bactericidal" actions, or in some indefinite way to regard them as capable of producing a beneficial result without troubling ourselves to ask by what methods these were obtained. After all, such terms, when carefully examined, tell us about results, but do not explain the action.

FINSEN'S LIGHT TREATMENT.

Finsen's earliest apparatus for the successful treatment of lupus was expensive and cumbersome. On the screen is shown a photograph (Fig. 3, p. 86) of the apparatus, and the early

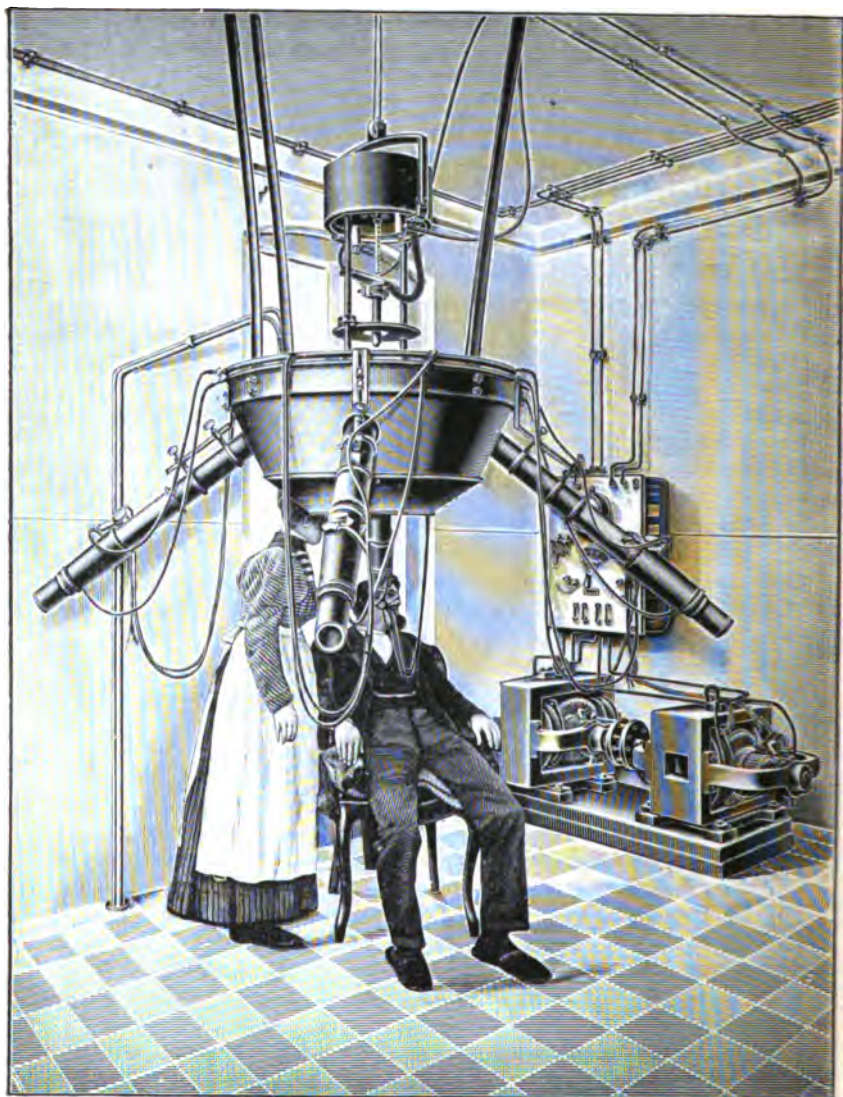


FIG. 3.

Finsen's original apparatus (from Schall's catalogue).

method of application. Suspended from the roof was a powerful arc light of 10,000 candle power, and the rays were

collected by means of a telescope in which quartz lenses were fitted in order to facilitate the passage of violet and ultra-violet rays. On the affected part a water cell was placed, through which cold water circulated to absorb the heat waves, so that by pressure the tissues were rendered as anæmic as possible, because we must remember that these short waves have a very slight power of penetration, and are easily stopped, as we know from Lenard's experiments. The objections to it

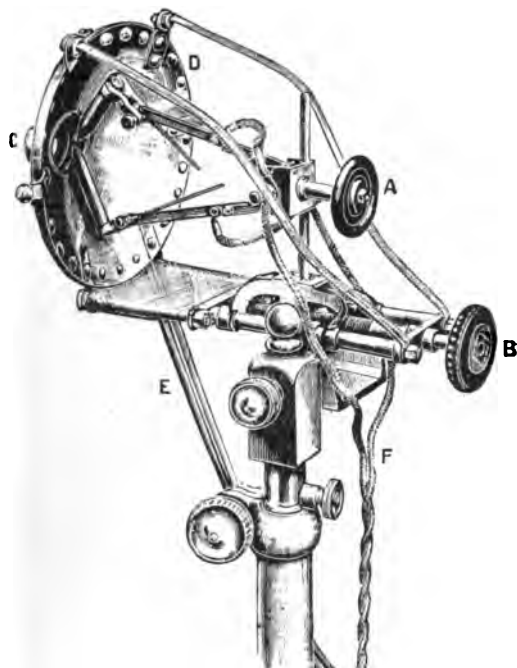


FIG. 4.

Lortet and Gounod's modification of Finzen's apparatus (Miller & Wood).

were, among others, firstly, that the light being so far from the patient, considerable loss took place; secondly, the area within which the action took place was very small; and, thirdly, the expense of the apparatus itself and the cost of maintaining it became a serious matter. Moreover, by this means it is not easy in any case to get to the deeper parts of the tissues. Reaction, sometimes troublesome, is set up in the skin, and the whole process is exceedingly slow. I know of one

case in which the patient attended a large clinic during thirteen months for a patch of lupus on the side of the face, and two equally large areas of affected tissue in other parts of the body were not touched because they were not considered as urgent as the face. Under the great pressure on the operator, evidently there was not time to treat these as well. It may be asked here whether it would not have been better to have scraped or cauterised the parts, but in answer to that it may be pointed out that even these methods are not always satisfactory, and the general experience of those working with Finsen's apparatus is that the worst scars form where operative procedure has taken place previously.

One of the most important points claimed for Finsen's treatment is the slight tendency to scar, whence the advisability of treating early and before any other local measures have been applied. A considerable number of modifications and improvements in the apparatus have already been made; thus Lortet and Gounod have made a lamp, which I now show you, and a photograph of which is also put on the screen (Fig. 4, p. 87). This particular lamp is the modification of the Lortet-Gounod as used by Sequeira at the London Hospital. By bringing the light close to the patient it is more efficient, the area acted on is larger, and it is much more economical both in cost and in maintenance. All these advantages combine to render each sitting and the whole course of sittings much shorter.

Others have been working in the same direction; thus Kjeldsen has sought a great amount of energy of chemical rays by the construction of a lamp, one pole of which is carbon, the other being metallic mercury volatilised inside a chamber. Although less luminous to the eye, its bactericidal property comes into action in much less time than the ordinary arc lamp, that is, for the same amount of electricity used.

Dr. Bang, of Copenhagen, has constructed a lamp, a model of which I show you, in which both electrodes are iron, his idea being that the spectrum of iron is rich in ultra-violet and violet rays. These electrodes may be cooled by water flowing through them, or they may be suspended in a vessel containing water. The apparatus is small and cheap: the bactericidal properties are great, and with a low amperage a reaction can easily be set up in the skin in a comparatively short space of time. Lastly, some experimenters have sought to employ the violet sparks between the discharge rods and an ordinary induction coil, and I now show you Goerl's apparatus, which consists of two metal points inside a metal chamber, carefully

insulated so that the patient may receive no shock. In the front part of this chamber is fixed a quartz lens, which can be pressed against the affected parts, and by means of a hand-ball, air is pumped in to keep the parts cool.

Walsham, of London, has been experimenting successfully in the same direction (Fig. 5), and he has introduced an interesting modification by dispensing with the quartz lens and passing the violet rays through a piece of ice, which offers comparatively little obstruction to the violet and ultra-violet rays. Another form of apparatus has lately been

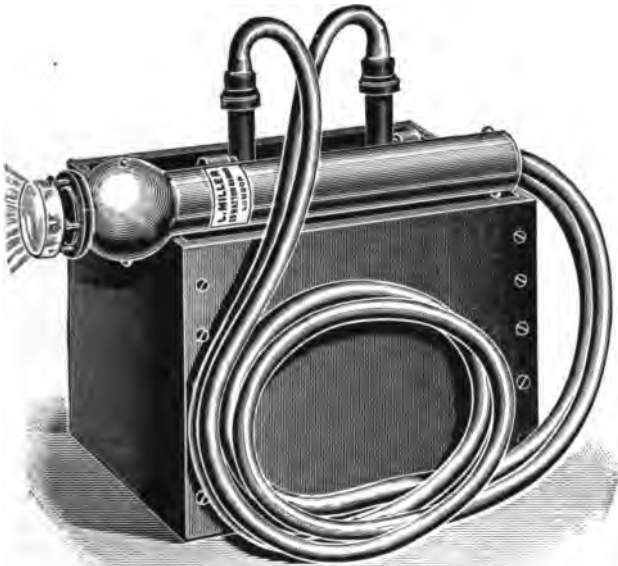


FIG. 5.

Walsham's apparatus for ultra-violet rays (Leslie Miller).

devised for giving ultra-violet rays, called the dermo lamp, of the Sanitas Company. It is very portable, and suitable for the consulting room (see Figs. 6 and 7, p. 90).

Of the results of this method of treatment little need be said at this meeting, inasmuch as Finsen has recorded the results of 456 cases, of which 130 have remained free of recurrence for periods of one to five years; and Sequeira, of the London Hospital, with whose results we are in this country most acquainted, has also had a large number of cases under

treatment, with most satisfactory results. Moreover, installations are becoming part of the electric departments of many hospitals in this country as well as on the American and European continents.



FIG. 6.

Sanitas dermo lamp.



FIG. 7.

Sanitas regulator and stand for lamp.

X-RAY APPARATUS.

I need not describe to you the apparatus for the production of the *x*-rays, because we are all so familiar with it. Suffice it to say that it is being largely employed in the same class of cases with success. The principle underlying its action is not known; some hoped that it was bactericidal, but the experimental work of Forbes-Robertson, and Wolfenden, and many others renders this exceedingly doubtful. In passing, I may be allowed here to say that there can be no question about the power of penetration; yet it is right we should remember that when a person is sitting in front of an *x*-ray tube he may be subjected to many forces. We know from Lenard, Crookes,

Sylvanus Thompson, and others that different forces are produced at the same time as the *x*-rays, and there is one to which I should like to draw your special attention, and which will be afterwards referred to this evening, namely, the electric field outside the tube. I have said that there is no need of describing the method of producing the *x*-rays to you, but I may be permitted to show you the whole apparatus in action, and to call your special attention to the condition of the tube. Most workers when they are exciting the Crookes'



FIG. 8.

The writer's installation for *x*-ray therapeutic work.

tube for therapeutic purposes seek the very opposite conditions to that which we employ in photographing. In the latter case we are afraid of burns or reaction, but here we are less so, although the results have to be carefully looked for, and at the right moment arrested. Therefore we protect the healthy parts with a shield of metal, and expose only a limited part of the diseased tissues to the tube. For this reason a soft tube is usually chosen, and every part of the tube is not equally powerful. If you excite a Crookes' tube and look at the fluorescent screen you will often find one specially bright and

luminous spot, which may be, but is not always, opposite the anti-cathode. These points were well brought out by Miss Sharp, of London, and it is well to mark this part of the tube. This part of the tube may be brought near to the affected part, say to within 3 inches distance, while the healthy parts are protected by means of a metal shield. Tubes differ in their action and vary in their conditions, but many workers believe that when the tube shows a bluish-grey cone or streak behind the anti-cathode, as we often see in soft tubes, good results may be expected. The duration of treatment depends upon many circumstances. Each application may be from five to twenty minutes: the amount of reaction which is set up must be carefully noted, and rest given until it subsides.

The extent and duration of the disease, as well as the condition of the patient, influence the treatment. That patients subjected to the influence proceeding from the *x-rays'* tube have been benefited no one can now doubt, but the results so far, as in all other methods, are best seen in the superficial tissues. Those interested in this will find an excellent summary in Schieff's work on *Roentgen Therapeutics*, where it will be seen that cases of lupus, lupus erythematosus, eczema, psoriasis, simple and malignant ulcers have been more or less successfully dealt with by such workers as Schieff, Jutassy, Hahn, and others. Of epithelial pathological tissues, the best results have been obtained in simple forms, although rodent ulcer and like affections have yielded to the method. Improvement in malignant disease has been claimed in a number of cases, but of this subject I shall speak later. Sufficient be it, meantime, to say that, notwithstanding the great power of penetration of the *x-rays*, the results in the deeper structures have not yet been very promising. The particular arrangement for therapeutic work used by me is shown in Fig. 8 (p. 91).

HIGH-FREQUENCY METHOD.

These currents, the result of Tesla's great work, were first studied from the medical standpoint by D'Arsonval, and while we were quite familiar with them in the treatment of nervous diseases, it is only of late that they have been tried in the affections we have already referred to. The same ideas underlie the treatment, as have already been described, but at present the same doubts about bactericidal action exist. I have here a typical specimen of the apparatus (Fig. 8, p. 91), made by Mr. Dean, of London, and the apparatus may

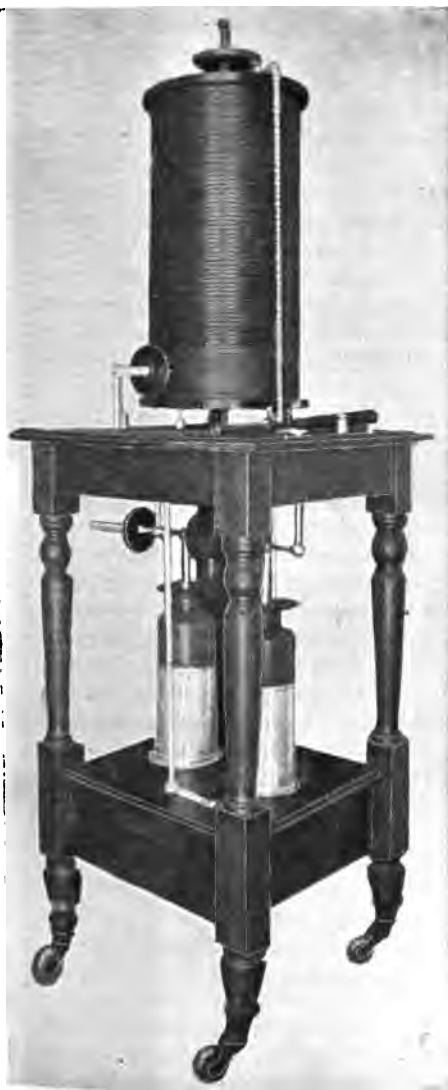


FIG. 9.

Dean's form of D'Arsonval's high-frequency apparatus.

be excited by means of the coil or alternating circuits. The powerful electric discharges from the secondary of the coil charge the condensers, which in this case are two Leyden jars, and these are discharged across the spark gap, which causes the current to be very frequently interrupted, and the waves are discharged into the auto-transformer, which in therapeutic apparatus corresponds to the primary and secondary of an ordinary Tesla.

For superficial affections it is customary to use an electrode of Dr. Oudin, which I show you. A breeze may be got from this resembling a static one from the Wimshurst's



FIG. 10.

Dean's apparatus for measuring high-frequency currents.

machine. Lately, as you will see from the medical journals, beneficial results have been claimed from high-frequency

currents in cases of phthisis pulmonalis. It is usually stated that these currents penetrate the tissues, but there can be no doubt they have a very great tendency to flow over the surface; experimental proof is not easily obtained. If applied in anything like strength they are more painful, probably because there is greater quantity, and because if one were graphically describing the curve of the waves it would be found that they reached their greatest intensity more quickly than in the case of the static machine which, however, would reach a far higher point, although the summit of the one would be attained not so suddenly but after a gradual rise in pressure. The class of affections in which this has been most successfully employed is again in the superficial structures, such as lupus, rodent ulcer, tubercle, &c.

HIGH-POTENTIAL CURRENTS.

Everyone here is more or less acquainted with the very old form of static machine, and the best of these is the Wimshurst. I show you on the screen the apparatus (Fig. 11, p. 97) arranged by me for applying the currents to the patient. The reason for trying high-potential currents was to a certain extent due to the fact that they seemed to offer possibilities for attacking diseased structures within the cavities, although, as will immediately be seen, the idea was suggested to me from observations upon different conditions of the fluorescent tube.

The following statements from my presidential address to the Laryngological Association last year, which I now quote, explain the reasons for employing the current, and suggest the possibility of electro-therapeutic action from the field in the region of the excited Crookes' tube:—

"It was difficult to see how we could apply the *x*-rays from the Crookes tube, seeing there is no means of reflecting or refracting them. I did, however, make many experiments on the superficial parts with considerable success. It was equally difficult when we tried to apply any of the radiating salts within the cavities, and the same may be said of Finsen's apparatus, although that has been considerably improved and simplified in the hands of Dr. Sequeira. Arsonval's modification of Tesla's high frequency apparatus promises much, and I have by no means exhausted my experiments in this direction. One great difficulty in its present form is the liability to sparking, which occurs from the electrodes when placed in the cavities, and which cannot be borne by the

sensitive mucous membranes. Many modifications of Oudin's resonator were made, and I think it yet possible that something may be done to modify these results. In consequence of careful study, however, I was induced to fall back on other means, of which I shall speak later. The subject was approached, however, in the following way:—The first thing which attracted my attention to the possibilities of therapeutic action was a dermatitis of my own hand, which occurred early in 1896. For reasons which need not be mentioned here, I was studying the effects of the rays on the fluorescent screen, and had placed a Bunsen burner below the tube. I was trying to verify the statements of J. J. Thomson as to the fact that there were different kinds of x -rays. At the end of a few nights' experiments, my hand became affected to such an extent that it was impossible to proceed with the experiments. It is to be noted here that the conditions in the tube were just such as we now recognise to be the best possible for producing such a dermatitis. The tube was soft, blue in colour, with a bluish-white stream passing down the centre of it. The hand was placed within a few inches of the bulb. There was no protection to the skin, and the experiments were repeated very frequently. I may here say that one beneficial result of these experiments was that it enabled me to avoid reaction in working generally with the x -rays ever since. I next went to the other extreme, and worked for a long period with hard tubes; and, thanks to Lord Blythswood, who presented me with an excellent device of his own for exhausting Crookes' tubes, I was able to make many experiments during the next two years in every possible condition of vacuum. My first observations were recorded in the *Lancet* at the date mentioned five years ago. There I stated that, at the time the dermatitis occurred, there were at least three possible agencies at work:—Firstly, x -rays; secondly, heat waves; and, thirdly, electric discharges round the tube. I found, as the result of experiment, that the heat waves could practically be discarded, and I am not now going to enter into controversy as to whether the x -rays produce the dermatitis or not. For our work, however, we could not risk them in the region of the larynx. It seemed, therefore, that the electric discharges were worth while considering, and to these I directed special attention. The next fact which arrested my attention was one which occurred over two years ago, when I tried the effect of the electric discharges themselves upon a patient suffering from rodent ulcer in the nose and face. The patient had been operated upon three times before.

I placed him in front of the *x*-ray tube, but arranged the current from the coil in such a way that one could not detect any *x*-rays by means of the fluorescent screen: the *x*-rays were, in fact, practically absent. The patient was treated daily for three weeks, and, at the end of that time, the rodent ulcer had healed. He was afterwards watched for a period, and instructed to return should there be a recurrence, but the part remained in a satisfactory condition. While the patient was being treated, if one drew the finger along his skin, a brush discharge could be felt distinctly; and, in fact, the patient was being charged much the same as if he had been placed in front of the old and well-known static machine. Being in possession of a large Wimshurst, I began experimenting; but, unfortunately, owing to a breakdown in the apparatus, my work was suspended for some months. It was quite clear to me, however, that the subject was one well worth investigation, because it suggested to a certain extent—but only to a certain extent—the lines upon which Arsonval had been working so successfully. It differed in the following advantages:—A current of greater potential, if less frequency; less liability to sparking; the choice of the negative or positive poles, the former being less painful; and, lastly, absolute control of the strength of these currents. If you follow me so far, you will see that one can obtain these high-potential currents, first, from the electric field round the tube; secondly, from a modification of Tesla's original apparatus, which I have made and tried; and, lastly, from the static machine. Moreover, by the modification of introducing a spark-gap (well described by Monell in 1893), greater force could be added at will, and by introducing a piece of spiral copper wire into the circuit with condensers it could be made to approximate to Arsonval's modification of Tesla. These methods I shall demonstrate by means of lantern slides.

"Turning, then, to the method of applying this force, let me say that I have followed the old and well-established rules of workers with static machines. The patient is seated on a chair placed on a table insulated by glass legs. Contact is made with the table by means of a metal conductor from the negative pole, and a wire from the positive terminal is led to the electrode. For our work I prefer a polished metal ball, and this may be placed at a distance from the patient, or introduced into a cavity. Some of these points or electrodes I have brought with me.

"Let me for a moment show you on the screen a photograph (Fig. 11, p. 97) of the ordinary electric discharge, or, in other

words, the sparks between the terminals of the Wimshurst. This is familiar to you all. Next, let me show you one representing the bluish lines of force passing from the positive electrode, which are quite visible to the eye, or what takes place in air under the conditions I have above described. This bluish, brush-like discharge suggests a force of great potential dashing towards the patient. It is accompanied by a hissing sound, and if there be no sparking it is painless, although the patient feels stimulated as if a cool breeze were playing upon the part.



FIG. 11.

Installation for high-potential currents, showing large Wimshurst machine.

The adjustments of the electrode must be made carefully to prevent sparking, but the speed of the machine easily modifies the force. The sittings last from ten to twenty minutes, and are given daily. The mouth or nose can be kept open by glass tubes.

"We might pause for a moment to consider what affects the patient. The electric currents themselves are invisible, but still the patient is receiving a tremendous number of stimuli from this bluish stream, the result of contact with

the air. We have it on the authority of Tesla that, with his apparatus at least, when a person is so electrified, he is bombarded with millions of particles of air, which, as they give up their charges of electricity, are setting up innumerable oscillations in the patient's tissues. In the hope of distinguishing between these two agents, I am showing you a parabolic reflector placed behind a series of brass balls, which can be stimulated to give off electric vibrations much the same way as in a wireless telegraphic transmitter. This mirror will send out no brush discharge, but electric oscillations; and, should it prove effectual, it will help us to differentiate between the therapeutic actions of electric oscillations and other discharges, and it will also have this further advantage that, if successful, it could be made large enough to stimulate a number of patients at the same time.

"Clinically, it may be of some interest to record the general facts to be observed during treatment. The patient experiences nothing beyond an exhilarating general effect; no pain is felt unless a spark should pass to the patient, and even then it is not serious. The dust of the room rapidly collects on the surface of the patient's body, being attracted by the electric currents. Healing, as a rule, progresses steadily; granulations form in the parts until they have reached the proper level, after which epithelial structures cover in the parts. It is further interesting to note that discharges rapidly dry, and that the effect is not limited to the part in front of the electrode, because in some instances I have found that, while one side of the face which alone had been stimulated was healing, other diseased structures on the other side at a distance took on the same action. There is no scar left. I have never seen the slightest attempt at reaction or dermatitis, which often accompanies *x*-rays, Finsen's, and in one case with me at least, high-frequency currents. I have had the best results where no surgical operation had previously been performed; in fact, in any case where a scar has resulted, or loss of tissue, it has been where other measures had at first been tried. No medicine in the test cases was administered, and no other kind of treatment was applied to the patient.

"I have thought of trying these high-potential currents in the deeper tissues; in other words, it is a fair question to ask—Would not the tissues of the larynx or the lungs be affected indirectly? So far, my best results have been got by applying the current in the way I have indicated, but I am at present engaged in a series of experiments to test the

internal as well as the external benefits. As yet, I have not been able to come to a definite conclusion in the matter."

RESULTS.

Passing to the consideration of the clinical results, let me first say that it is a matter of great difficulty to lay down any rule for the choice of a particular method. Each seems to possess advantages and disadvantages in different affections, and even in individuals, but one is guided somewhat by the seat of the affection, the acute or chronic nature of it, the condition of the patient, whether the disease is superficial, deep, or in a cavity, how the affection responds to the treatment, the prospective duration and number of the sittings, and many other things which can only be gained by experience.

In the second place, I should like to say of the different methods that it would be presumption on my part, as far as Finsen's methods are concerned, to offer an opinion, as they have now been sufficiently practised by Finsen and others to enable anyone to judge of the results. Further, the fact that clinics are being established in many of the great centres all over the European and American continents is sufficient testimony to the general belief in their efficacy, notwithstanding all the disadvantages. I have had ample opportunity here and elsewhere of judging of the results, and, like others, have seen, and can record, successful results.

With a view to showing the difficulties in selecting a method, I may say that a patient, suffering for thirty years from lupus of the nose and face, was sent by me to Dr. Sequeira, in London, because of a fear of its having been invaded by malignant disease, and he chose *x*-rays, not Finsen, with gratifying results.

Speaking of *x*-rays, it may at once be said that we have at present over thirty cases under observation at the Glasgow Royal Infirmary, where Finsen's method is also being practised, for the most part in lupus, scrofuloderma, rodent ulcer, &c., with most favourable results, and in two-thirds of the cases patients have ceased to attend because of the successful results. They will, of course, be kept as far as possible under observation, lest there should be recurrence, for many were of many years' standing, and had been previously subjected to other methods of treatment. If I were to offer an opinion, I should say that in properly selected cases the results seem to be more quickly obtained than with Finsen's

method, but one must not venture to dogmatise on this point. Of high-frequency currents I have not yet had so much experience, either in hospital or private practice, for the reason that most of the cases seem better suited for other methods: but in the hands of others, and likewise in a few instances in my own, the results have been quite satisfactory.

The effects of high-potential currents have, in a considerable number of instances, proved very satisfactory in cases of lupus, rodent ulcer, and in one or two cases of tubercle. Experimental work is being further pursued, and I have tried the method in malignant disease.

A considerable number of photographs of patients under treatment will now be rapidly thrown upon the screen showing the results in cases still under treatment, and in others which may be considered well and beyond the necessity of further application. Some of these are acute and recent, others of old standing; one of lupus of twenty years' duration, and satisfactorily improving, as you will see from a series of photographs of her case.

Perhaps I might, in a word or two, pay special attention to typical cases. Here is one of a young lady, 30 years of age, in whom the mouth, nose, and face were successively involved from below upwards. In this instance every known method had previously been tried, and another surgeon had, under chloroform, gouged, curetted, and cauterised the external parts with no sparing hand, but with almost immediate recurrence. In four months' treatment everything had healed up, as you see from the photographs. No scar remains, except where the parts had been destroyed by the previous procedure.

In another case a tumour of the septum of the nose, in a young man of 22, where a sarcomatous element was feared, but which was proved, on microscopic observation by the pathologist, to be tubercular, and which caused complete stenosis of the left nostril, has healed up. As showing the effects in a somewhat more acute affection, lupus erythematosus of four months' duration, and covering the whole scalp, face, and neck, decided improvement rapidly took place. This man, aged 33, had made very little progress under the usual methods of treatment carefully and skilfully applied over a period of four months. In this case it is right to state that no change was made in the treatment he was having from his medical adviser, Dr. Martin, because the application of the static machine was considered experimental. In other words, this was added to his ordinary treatment. In six days the cheeks began to blanch, in seventeen he was able to pass a medical

examination to go abroad, in six weeks the treatment was finished.

In the next photograph, one of rodent ulcer of the face, you will see the improvement which has taken place in three weeks; the patient is just finishing treatment, after three months, but I am afraid of recurrence. In other cases I have been more successful, as I have one in which the treatment was completed nearly three years ago, and which still remains well.

Coming now to the grave question of malignant disease, I approach the subject with every sense of responsibility. In such times as these, when we read, not only in the lay papers, of "cures of cancer," and when suspicious headings of papers appear even in some medical journals, no one can be too guarded in making statements. If we mean by cancer the superficial forms of epithelial growths, such as rodent ulcer, or even diseases of the breast, such as Paget's nipple, then good results have undoubtedly been recorded. These are not what people generally understand by the word cancer, nor are they what you and I understand as the fatal types proceeding from primary seat of the lesion, to be followed by glandular and other secondary changes, with all the attendant results of blood poisoning. Of such advanced cases, deeply seated and in the cavities of organs, I do not dare to speak, and I know of no great results in such by any method of treatment. There is something to be said in this way, that patients who are considered within the range of operation will not submit themselves to new methods of treatment for obvious reasons, and hence the cases which are tried at present are, as a rule, beyond hope from any method; consequently tests are generally disadvantageous and unsatisfactory. Can we make any impression in such?

Speaking with all these reservations, might I be allowed to select from some, and point out what has taken place in two cases? In one, a man, aged 60, sent to me from London, suffering from epithelioma of the lower jaw and side of the tongue, and diagnosed by a number of prominent physicians and surgeons as undoubtedly genuine epithelioma, has been under treatment for three months. In extent, as I saw him at first, the ulcer reached from the second lower tooth back to the angle, and up the inside of the ramus to the upper maxilla. He had *x*-rays applied before coming to me, and at first I continued these, but, dreading reaction, I applied the high-potential currents. There was no glandular enlargement. Gradually the pain darting to his ear subsided, the jaw became freely movable, and he could chew and swallow with comfort.

During treatment the diseased area became very much circumscribed. He has gone south at present, and last week, when I left him with his medical attendant in London, the latter confirmed the improvement locally, while the general appearance was much better; his weight was being maintained for four months, and had even slightly increased. This result is all the more satisfactory, as one of the main reasons for the surgeons considering the case to be inoperable was the fact that he suffered from weak heart, and aneurysm of the aorta as well. I make no claim, but simply state the facts, remembering that from its situation the affected part could easily be attacked.

In another case of serious malignant disease, sent to me by Dr. Dundas Grant, and seen also by Mr. Watson Cheyne, changes worth noticing have been recorded. The case, one of a man, 58 years of age, is one of extensive disease involving the whole larynx, the left side of the pharynx, and the upper part of the œsophagus. The swelling could at first be felt externally as a mass about an inch in length, and this has practically disappeared after three months' treatment. The positive electrode was introduced, as far back in the mouth and as near the larynx as possible, through a glass tube which acted as a mouth gag. The mass, as seen with the laryngeal mirror, filled the hyoid fossa, and overhung the larynx on the left side. Breathing was somewhat obstructed, and there was difficulty in swallowing. From week to week it was observed that the tumour was decidedly breaking down, and now the larynx is quite clear. In two months' time he was again swallowing solid food. Instead of a large, exuberant, irregularly convex mass, it is now scooped out concave as seen from above, cleaner, and granulating. No doubt some of you will be inclined to say, and, perhaps, with truth, that an escharotic and many other things would have done the same thing. No other treatment has been given, but, so far, neither tracheotomy nor gastrostomy, which were feared, have been required, and the treatment is being continued.

This case is an advanced one, and there can only be one end to it, because the tumour is extending downwards in the neck while improving higher up, and the cachexia is distinct.

Two or three important things may be noticed in a general way about treatment. Occasionally one may see a red spot or two, afterwards healing up, but appearing at a distance from the wound, sometimes so far removed that the surgeon would perhaps not think it necessary to operate. These, I

have little doubt, are distant foci of infection. Again, sometimes when one side only of the face, say, is being treated, the other side begins to heal, showing that the effect is taking place at a considerable distance from the point of application. I have seen no bad results nor inconvenience follow with the static machine, even where the eyeball has been affected. As the tissues heal up, hollows fill up with granulation before the epidermal covering takes place, and consequently there is little tendency to the formation of scars. Recurrence I have witnessed in some cases, but that can be said of every method of treatment.

CHRONIC SUPPURATIVE DISEASE OF THE MIDDLE EAR.

By JAMES KERR LOVE, M.D.,
Aural Surgeon to Glasgow Royal Infirmary.

(Concluded from p. 11.)

Prognosis.—If it be the case that this disease so often involves the mastoid cells and tympanic attic, our expectations with regard to any treatment short of a radical operation will not be sanguine. These adnexa cannot be properly drained without free opening up of the bony recesses which compose them. On the other hand, if it be the case, as I shall try to show, that practically every case can be cured by the help of the radical operation, the prognosis and the treatment will be correspondingly modified. In giving a prognosis, the condition of these recesses is of the first consideration. If the disease has lasted several years, and if it has originated in scarlet fever or measles, it is not likely that mere washing and drying, however thoroughly done, will effect permanent stoppage of the discharge. If removal of granulation masses be followed by their reappearance in spite of careful cleansing, it is almost certain that nothing short of a radical operation will effect a cure. On the other hand, if the disease has not originated in a virulent cause like scarlet fever or measles, and especially if there be no granulation masses springing from the upper and back part of the middle ear, careful syringing and drying often end in cessation of the discharge. The mere striking by the probe of the bare internal tympanic wall, or of a

necrosed ossicle, is not enough to warrant a bad prognosis. Such impact of the probe on the anterior and lower part of this wall towards the upper end of the Eustachian tube is very common, and generally yields to proper treatment short of operation, and, in any case, no operation on the mastoid would do anything to cure disease in this situation.

In young children affected with the dentition type of the disease, whether the destructive process be extensive or not, the disease is usually tubercular and the prognosis bad. But even here the radical operation greatly increases the patient's chances of recovery, and, unless tubercular disease be suspected elsewhere, a favourable opinion may be given as to the result of operative treatment.

Treatment.—

“Oh, don't the days seem limp and long
When all goes right and nothing wrong!”

Such is seldom the complaint of any type of medical practitioner, and never that of the aural surgeon. Chronic suppurative inflammation of the middle ear follows its quiet, unobtrusive course in the vicinity of three important structures—the facial nerve, the lateral sinus, and the brain. Each or all of these three structures may be already exposed before the surgeon commences his operation; each of them is separated from the field of operation by the thinnest bony partition. I have injured each of them in attempting to deal thoroughly with disease of the middle ear and mastoid cells, but I have never lost a case, nor, so far as I know, done permanent harm to any of them where a previous intracranial complication did not already exist.

But, of course, operation is in a sense not the chief, and is never the first, treatment of chronic suppurative disease of the middle ear. It is to be reserved for those cases which cannot be otherwise cured within a reasonable time. Perhaps this is the place to state my opinion that it should be adopted in every case where complete cessation of the discharge cannot be got by simple means. If it be true that so long as a patient has a perforation and an ear discharge he is in peril of his life, then it is true that such a safe operation as the mastoid operation, performed in the absence of intracranial complications, should be urged in every case where cessation of discharge cannot be got by simpler means. What, then, are these simpler means? If most of the tympanic membrane be already gone, these will consist of some form of cleansing

carried out at regular intervals over a long period. Generally a syringe must be used. If the amount of discharge be great, it must be used at every dressing, and even where the discharge be very small it must be used occasionally, for the discharge becomes caked into hardened flakes over the inner end of the external auditory canal. But whether the syringe be used often or seldom, the middle ear must be dried most thoroughly with cotton tips, and the canal made dust-proof by filling it lightly with a wick of absorbent cotton or sterilised gauze. Whenever it is discovered by the tentative use of the cotton tips that the middle ear is again damp, the dressing should be repeated. Sometimes powders may be insufflated with advantage in these cases; but where most of the membrane is gone, and thorough drying can be carried out, they seem to me unnecessary, and it should not be forgotten that both iodoform and boracic acid now and again set up eczema in the canal and watery discharge from the granulating surfaces in the middle ear. This tendency of iodoform is well enough known, but I have not seen it noted with regard to boracic acid. This agent, although useful in the majority of cases, both in powder and in solution, sometimes gives rise to troublesome eczema, and when insufflated may be reduced to a wet mud in half an hour or less by the serous discharge which it has set up. But, except in this margin of cases, it is a useful agent. On the whole, a solution of carbolic acid, 1 to 60 or 80, is the best for using with the syringe where an antiseptic lotion is deemed desirable.

One dressing a day, if followed by careful drying, is generally sufficient in chronic cases; but in some, careful drying once a day, and the use of the syringe once or twice a week, or even once a fortnight, will suffice. When the discharge becomes flaky and tough it is easily removed by a 3 to 5 volume solution of peroxide of hydrogen.

When most of the membrane is left, and drainage from the middle ear is deficient, the treatment is more difficult. The perforation may be happily enough placed low down and behind in the posterior inferior quadrant of the membrane, but so small that the middle ear cannot be emptied or cleansed. This condition is more common in acute or subacute cases, for long continued discharge usually causes destruction of tissue, and, therefore, fairly large perforation in this lower and posterior part.

When the perforation is pinhole-like, the pus is often seen to ooze out of it drop by drop as it is removed by the cotton tip, the tension in the middle ear being great, and the whole

membrane being more or less bulged outwards. In these pin-hole perforation cases the proper treatment is the free slitting of the membrane downwards and backwards away from the ossicles, and the subsequent treatment of the case on ordinary lines, viz., carefully cleansing by syringing and drying, and the subsequent exclusion of all outside poison by lightly placed dry dressings in the canal.

For the more thorough emptying of the ear, auto-inflation by Valsalva's method is of great value.

When the perforation is small and placed high up, it generally leads to a necrosed ossicle. Although in many of these cases the ossicle has to be removed, this is not invariably so. Only a small part of the ossicle may be dead, and if it can be well reached through the perforation, and its surroundings cleansed, dried, and powdered, recovery may take place without operation.

CASE III.—Mrs. B., wife of a clergyman, sent by Dr. Geo. Hunter, in December, 1897. In January, 1897, she took pneumonia, and after three days of pain in the left ear, discharge appeared, and has since persisted. There was a fairly large perforation above and in front, leading to a necrosed malleus. The discharge was slight, but constant. The ear was washed, dried, and insufflated with powder of aristol for some months once a week, then at intervals of two to three weeks, and ultimately every two months till July, 1901, since which date there has been no discharge. Each time a crust was removed; and if too long was allowed to elapse between the dressings, pain began from the pressure of the crust on surrounding structures.

When last I saw her (February, 1902) there was an open perforation, but no crust or discharge of any kind, and the probe detected no dead bone. The hearing for whispered speech was good, and only a little lessened for the tick of my watch.

CASE IV.—Miss H. came to me in December, 1899, with a perforation in the upper and back part of the left tympanic membrane, which led the probe to a necrosed ossicle. She complained of pretty acute vertical headache. The discharge was very slight, but had caked into a large crust. The same treatment was followed as in the last case, at lengthening intervals, for three or four months, when patient ceased coming.

In November, 1901, the headache returned, and she came

back to me, when almost exactly the same objective phenomena were discovered. Again the crust was removed, the dressing at weekly intervals resumed, and in three months all discharge ceased. The perforation remains, but the probe discovers no necrosis.

In this case the cause of the suppurative disease could not be ascertained. I have no doubt about the ultimate result, but a larger interval than three months must elapse before it can be confidently stated.

These cases of slight discharge with perforation leading to a necrosed ossicle do not always end so happily. Sometimes it is necessary to remove the ossicles. This, of course, involves the loss of the remaining parts of the tympanic membrane; but, on the other hand, it reduces the middle ear to a simple, plain-walled, easily-cleansed cavity, and, if there be no necrosis of its walls and no mastoid disease, healing will follow. I have many times done this operation, both in hospital and in private practice, with the best results. The details of the operation need not be discussed here, except that I would like to say that many of the special instruments for disarticulating the ossicles, &c., are unnecessary, and, I suspect, not accurately used, even in the hands of their inventors. With the help of cocain and adrenalin, both pain and bleeding can be well controlled. In children, a general anæsthetic should be used.

Nearly all these cases will do better if the naso-pharynx be at the same time cleared of all obstruction by a Gothstein ring-knife, and the nose itself put into a healthy condition.

CASE V.—W. S., æt. 10, Beith. In the left ear is a granulation mass hanging from the roof. This ear is said to have discharged for two months only, but, as the right ear has suppurated since he was a baby, being only occasionally dry, I suspect the suppuration has been continuous in both since childhood. I saw the boy on 8th January, 1902. He had diphtheria at 3 years of age, measles at 8 years, and scarlet fever and rheumatic fever just after this. In addition to the currant-like granulation mass seen in the left ear, the probe entered a small perforation near the right malleus, but it does not detect any really bare bone. The tonsils are moderately large, and look very unhealthy. The naso-pharynx is packed with adenoid growths, and the boy looks anæmic and flabby.

On 9th January he was anæsthetised, the adenoids thoroughly removed, the currant-like mass in the left middle ear snared, and a small scraper afterwards applied.

In May, when I last saw him, all discharge had ceased from both ears; the probe detected no bare bone anywhere. The hearing, which had become very deficient, had greatly improved, and the boy's general health was better than it had ever been.

Another class of cases is that in which extensive destruction of the structures in the middle ear has taken place as the result, say, of an attack of measles or scarlet fever, and in which the distribution of granulation masses or the application of the probe, or both, indicate the presence of disease of the mastoid cells and the tympanic attic.

Now, most of these cases will require the mastoid operation, but, unless urgent mastoid or intracranial symptoms exist, less heroic measures should be tried first. All granulation masses should be removed by snare or scraper in the first place, and then the treatment carried out by syringing and drying as already indicated.

Having done all this, how long are we to wait before proposing the radical operation? Various terms have been set for this less heroic treatment, ranging from a year or more down to three months or less. I have got healing after patient treatment extending over a year. I have operated after less than a fortnight's treatment, and have found ample justification for the procedure. Remember, there is no apparent hurry in any of these cases. No acute symptoms of any kind exist. The patient is anxious enough, no doubt, to be rid of a discharge the management of which gives him a little daily bother, but he does not appreciate the real risk he is running in letting the discharge continue. And he is not to be blamed for this want of appreciation. It is not so many years since we surgeons understood the dangers, and, if the last generation of practitioners thought it dangerous to interfere with a discharge from the ear, we need not blame the present generation of patients for quoting the absurdity. But, assuming that the patient puts himself entirely in our hands, we should perform the mastoid operation as soon as we have proof that a careful toilette of the middle ear has not been followed by improvement. In particular, if granulation masses have been removed and again sprung up, no more time should be wasted over preliminary treatment. I assume that, in suitable cases, the ossicles have been removed, but the distribution of these recurrent granulation masses is often such as to point directly to the mastoid cells, and no time need be wasted over removal of the ossicles.

What should this radical operation consist of? Up till recently the prospects, even after a successful operation, were to the patient somewhat mixed. He had the assurance of the surgeon that his brain was now safe from attack. This did not comfort him much, for, unless he had passed through an acute mastoiditis which had subsided, he never was much disturbed by the fear of a meningitis or brain abscess. On the other hand, the mastoid wound created by the operation had given him great trouble. It had been kept open and regularly dressed for many months, or even a year, and now an ugly pit is left. Further, the discharge in many cases continued, and that was all he had before the operation. Why should he rejoice over the results of an operation which had only delivered him from a far-off danger, but had left him with his running ear *plus* the unsightly pit behind the auricle. If, however, an operation can be devised which will shorten the period during which dressings on the head must be worn to two or three weeks, which will leave no mark on the mastoid process, and which will almost certainly heal the middle ear and give a guarantee approaching to certainty that discharge will never return, it will quite alter the patient's attitude towards the proposed operation. And this is what can be done. This is not the place for the discussion of the details of the mastoid operation, but the consideration of the disease which forms the subject of this paper would be incomplete without indicating how this is done.

The incision behind the ear is made along the line of attachment of the auricle to the side of the head, and the auricle thoroughly laid and held forward. The whole posterior-superior wall of the external auditory canal is then removed, and the malleus and incus extracted if they have not been already exfoliated. The tympanic, attic, and the mastoid cells are thus laid into the middle ear, and one smooth-walled cavity, including all bony recesses, is thus created. So that this cavity may be easily reached and thoroughly dressed from the external auditory canal, a probe-pointed knife is made to cut the posterior cartilaginous wall of the external auditory canal, from its inner end right up to, and a little way into, the concha. The mastoid wound is then accurately and finally closed by stitches, and the bony cavity packed from the external auditory canal. No dressing need be done for a week, and at the second or third dressing all the mastoid stitches may be removed, and the side of the head left without conspicuous dressing. Further treatment of the middle ear is conducting from the canal, and healing is generally finished

in from two to three months, sometimes in six weeks. No perceptible mark is left anywhere as the result of the operation, and within a month the patient may resume his usual work.

The method of skin-grafting, introduced about two and a half years ago by Mr. Ballance, has for its object the more rapid healing of the middle ear after this operation. It is one of the most ingenious modifications of surgical methods with which I am acquainted, and is undoubtedly useful in cases where a large surface has to be rapidly healed; but, if the operation which I have outlined be thoroughly done, and all diseased foci removed, skin-grafting will seldom be necessary. For good results by Mr. Ballance's method, very thorough work at the original operation is necessary, and, whether we adopt Mr. Ballance's operation as a routine auxiliary to the major operation or not, aural surgeons are indebted to him for the clearness with which the following of his operation has demonstrated the need for thoroughness in every detail of the radical mastoid operation.

The objections to Mr. Ballance's method are that, at the end of a time—averaging, say, a fortnight, but varying from ten to twenty days—the mastoid stitches have to be removed, the wound ripped open, the patient chloroformed, and another fortnight made to relapse before he can have his dressings removed from the side of the head. The advantages are that, in large cavities, earlier final healing of the middle ear takes place, and probably in some cases there is less liability to breaking down of the healed surface.

The following cases are appended as examples of the treatment of chronic suppurative middle ear disease by operation. In one or two, the operation was rendered imperative by urgent symptoms; in most, no urgency existed; in all, healing was impossible without operation. The cases were shown at a meeting of the Glasgow Medico-Chirurgical Society on 4th April, 1902.

CASE I (already referred to in this paper, see p. 4).—*Obstinate otorrhoea—Erosion and exposure of dura mater through tegmen tympani—Operation—Cure.*

Barbara C., æt. 13.

Origin.—Measles at 7 years of age. At the attack the nasal symptoms were bad, and there was pain in the ear, but definite discharge dates only from June, 1901, although there has been recurring earache during the six years.

Condition before operation.—In October, 1901, she came with polypi in the left ear. After removal of these the discharge almost ceased, but the granulation masses began to sprout from a point on the roof of the middle ear, where the probe easily detected bare bone.

Operation (14th December, 1901).—The tegmen tympani was found eroded and perforated, the upper end of the granulation mass projecting through it and the dura mater being exposed. The radical operation was done, the canal split, and the mastoid wound stitched. It was twice dressed before 26th December, when grafting was done.

Dismissed from "Home" on 10th January, with the whole tympano-antral cavity skinned except at one small point at the junction of the graft and the upper meatal flap.

Result.—Complete healing of middle ear. Hearing for whispered speech good.

CASE VI.—Obstinate otorrhœa—Removal of ossicles on September, 1901—Continuation of discharge—Radical mastoid operation on 5th December, 1901, and grafting operation on 20th December.

M. M'K., æt. 9, admitted to the Glasgow Royal Infirmary on 26th November, 1901.

Origin of disease.—Teething.

There were no symptoms of any kind to throw suspicion on the mastoid, but when the radical operation was done all the cells were found filled with pus. Now all discharge has ceased, except from a small surface at the upper end of the Eustachian tube. Patient hears whispered speech well, and my watch at 2 inches from her ear.

CASE VII.—Obstinate otorrhœa—Radical mastoid operation—Cure.

Lizzie S., æt. 14, admitted to Ward 6 of the Glasgow Royal Infirmary on 20th October, 1901.

Origin.—Chronic suppuration of the right middle ear, dating from an attack of chorea two years ago during convalescence, from which pus and blood began to come from the ear.

Palliative treatment.—As the tympanic membrane was entirely gone, and the middle ear was filled with granulation masses, the latter was curetted with the help of adrenalin and cocaine, but in a week or ten days the granulations sprouted again, and the discharge continued.

Operation (12th December).—No pus, and only a few granulations were found in the mastoid cells, which were few in number. The radical operation was done, the canal split, and the mastoid wound stitched. Skin-grafting was done on 24th December.

Result.—Dismissed well on 14th February.

CASE VIII.—*Acute mastoiditis after chronic (?) suppuration of the middle ear—Partial mastoid operation—Cure.*

John B., æt. 8, seen on 8th November, 1901.

Origin.—Doubtful.

Condition before operation.—Pain and swelling over the mastoid process, and tenderness on pressure. No apparent discharge from middle ear, but the probe, when carefully applied, discovers bareness of the internal tympanic wall, and the syringe brings away a little flaky discharge.

Operation (9th November: temperature on 8th, 101° F.).—As there is an absence of definite history of an old-standing cause, the "partial" mastoid operation was performed. A very free communication was got from the mastoid wound to the middle ear, and the mastoid wound was plugged.

Result.—On 12th February ear quite dry, and mastoid wound healed. After the operation the temperature never rose above normal.

CASE IX.—*Obstinate otorrhœa—Removal of polypi—Curettng of the middle ear—Return of disease—Radical mastoid operation.*

William K., æt. 11, seen on 8th February, 1902.

Origin.—Discharge commencing in scarlet fever at 6 years.

Condition before operation.—Moderate sized polypus occupying internal auditory canal. Probe discovered bare bone on internal tympanic wall, and also upwards and posteriorly in direction of aditus ad antrum. No ossicles visible, and only small part of the tympanic membrane seen upwards and in front.

Effect of palliative treatment.—After removal of polypus, granulations recurred. Discharge continued to have a bad odour in spite of dressing twice daily.

Operation (3rd March).—Granulations found in antrum and attic.

Result.—All dressings removed from side of head twelve days after operation. Patient dismissed from "Home" on sixteenth day.

CASE X.—*Acute mastoiditis, without definite history of chronic otorrhœa—Partial mastoid operation, later, radical mastoid operation—Facial paralysis occurring within a few hours of the radical operation—Entire cessation of discharge, and gradual disappearance of the paralysis.*

W. G., æt. 4½. On 2nd October, 1901, a Wilde's incision was made, and some pus evacuated from the bone. On the 4th, after the swelling of the soft parts had subsided, the mastoid cells were opened, and pus and granulations were removed from them. Progress being unsatisfactory, the radical operation was done on 7th November. The facial nerve reacted thoroughly just after the operation, but shortly afterwards became totally paralysed. All discharge has now ceased, and the nerve is recovering. The progress of the case raised the suspicion that it was tubercular in origin, a suspicion which is strengthened by the fact that there is a small strumous ulcer on the opposite cornea.

Conclusions.—1. That all cases of old-standing disease of the middle ear in which the discharge cannot be stopped by palliative treatment should be treated by operation, and by the radical mastoid operation if necessary.

2. That in performing the mastoid operation the routine treatment should consist of removal of the entire posterior bony wall of the external auditory canal, splitting the soft parts into the bony wound, stitching the mastoid wound closely, and conducting subsequent dressings through the split canal.

3. That there is no practical advantage in skin-grafting the tympano-antral cavity, except it be unusually large, but that in the latter case the proceeding is of great value.

4. That for rapid and certain healing the prime conditions are removal of every vestige of disease, and the reduction of the tympano-antral recesses to one plain walled, bony cavity, every part of which is easily accessible from the split external auditory canal.

5. The radical mastoid does not usually further impair hearing.

CURRENT TOPICS.

WESTERN INFIRMARY.—Dr. Archibald Young, B.Sc., has been appointed Extra-Dispensary Surgeon.

GLASGOW MATERNITY HOSPITAL.—Dr. W. Ernest Thomson, M.A., F.F.P.S.Glas., has been appointed Ophthalmic Physician to the Hospital.

GLASGOW UNIVERSITY: GRADUATION IN MEDICINE.—The summer graduation ceremony took place in the Bute Hall on Tuesday, 15th July, the Very Rev. Principal Story presiding. After the ceremony, Professor Samson Gemmell delivered the usual address to the graduates. The following is the list of those who obtained degrees:—

DOCTORS OF MEDICINE (M.D.)

I.—WITH COMMENDATION.

Andrew Wilson, M.B., C.M., Scotland. *Thesis*—"A Clinical Study of the Relation of Syphilis to Diseases of the Eye."
 Andrew Colville Wilson, B.Sc., M.B., C.M., Scotland. *Thesis*—"The Medullated Fibres of the Cerebral Cortex."

II.—ORDINARY DEGREE.

Hugh Wright Thomson, M.B., C.M., Scotland. *Thesis*—"A Clinical Study of Tobacco Blindness, with an investigation into its relationship to certain symptoms other than ocular."

BACHELOR OF MEDICINE AND MASTER IN SURGERY

(M.B., C.M.)

Thomas Small Goodwin.

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY

(M.B., CH. B.)

I.—HONOURS.

*Andrew Miller Kerr.

Joseph White, M.A., B.Sc.

John Morrison.

II.—COMMENDATION.

William George Rodger.

James Crawford Ross.

Alexander Grey Banks.

John Muir, B.Sc.

Ivy M'Kenzie, M.A., B.Sc.

Ernest David Jackson.

Thomas Irby Wallace.

John Guthrie.

David Riddell.

* Mr. Kerr gains the Brunton Memorial Prize of Ten Pounds, awarded to the most distinguished graduate in medicine of the year.

III.—ORDINARY DEGREES.

William Kirkpatrick Anderson.	John Chancellor M'Kenzie.
William Armitage.	Alexander Maclean.
Robert James Arthur.	Alexander M'Gaw M'Millan.
James Campbell Bringan.	Dugal Henry Macphail.
Margaret Elizabeth Bryson.	Richard Makins.
Angus Campbell.	Robert Harry Manson.
Robert Harold Campbell.	Janet Thomson Miller.
John Shedden Dale.	William Alexander Milne.
Alexander Dick.	Alexander John Mitchell.
Donald Douglas, M.A.	Allan Dixon Mitchell.
Andrew Robertson Dow.	James Stuart Nicolson.
James Drummond.	James Nimmo Prentice.
George Ferguson.	John Mark Reid.
John Ferguson, M.A.	John Walker Renton.
Eric Dalrymple Gairdner.	Thomas Richmond.
William White George.	Norman Cumming Rodgers.
John Miller Gordon.	Andrew Taylor Ross.
John Andrew Hagerty.	James Russell.
Ronald Dingwall Hodge.	James Smith.
John Brown Dalzell Hunter.	John Williamson Smith.
Neil M'Coll Hutchison.	Robert Cassels Smith.
George Rutherford Jeffrey.	David Spence.
William Fletcher Kay.	John Stevenson.
John Kennedy.	John Barbour Stewart.
Robert Laurie.	Joseph Swinburn Townley.
Archibald Leitch.	William Wagner Turner.
Stanley Everard Lewis.	Alexander Brown Watt.
Joseph Paterson Luak.	David Ashley Wilson.
Alexander Macintyre.	

At the fourth (final) professional examination the following candidates passed with distinction in the subjects indicated:—

In (a) Surgery and Clinical Surgery, (b) Practice of Medicine and Clinical Medicine, (c) Midwifery.—Andrew Miller Kerr, William George Rodger.

In (a) Surgery and Clinical Surgery, (b) Practice of Medicine and Clinical Medicine.—Alexander Grey Banks, Ivy M'Kenzie, M.A., B.Sc.; David Riddell, James Crawford Ross, Joseph White, M.A., B.Sc.

In (a) Surgery and Clinical Surgery, (b) Midwifery.—Thomas Richmond.

In Surgery and Clinical Surgery.—James Campbell Bringan, George Rutherford Jeffrey, William Fletcher Kay, Robert Laurie, John Morrison, John Muir, B.Sc.; James Stuart Nicolson, John Mark Reid.

In Practice of Medicine and Clinical Medicine.—George Ferguson, Eric Dalrymple Gairdner, Ronald Dingwall Hodge, Ernest David Jackson, Richard Makins, Janet Thomson Miller, John Walker Renton, James Russell, William Wagner Turner, Thomas Irby Wallace.

In Midwifery.—Angus Campbell, Alexander M'Gaw M'Millan, Robert Menzies.

ANDERSON'S COLLEGE MEDICAL SCHOOL.—The following is the prize list for the summer session just closed:—

Regional Anatomy (Professor A. M. Buchanan).—Honours: Jas. A. Ashurst and Alex. C. Russell (equal), James H. Baird, John C. Russell, Wm. N. Walker, Alfred E. M'Dougall, John Macnamara, Hugh A. Macewen, Thos. T. Rankin and Thos. O. Wilson (equal), Alex. M. Watson and John Watt (equal).

Descriptive Anatomy.—Honours: Peter Mitchell, M.A., Jas. H. A. Robertson, Arthur M. Crawford, Thos. M'Cririck, M.A., Thos. B. Smith, James H. Milne. *Class Prosector*: James A. Ashurst.

Physics (Professor Bennett).—Honours: J. H. Paterson, Donald M. Johnstone.

Botany (Professor Cormack).—Honours: J. Arthur Smith.

Zoology (Professor Todd).—Medal: J. Arthur Smith. Honours: G. W. Hill, Jas. B. Macgregor, John Fotheringham, Arch. R. F. Douglas.

Practical Pharmacy (Professor R. Barclay Ness).—Honours: A. R. M. MacIlraith, Wm. MacIlraith, Arch. F. Spinks.

Midwifery (Professor Edgar).—Medal: Reginald N. Macdonald. Honours: James Cullen, And. F. Garrand.

Medical Jurisprudence (Professor Carstairs Douglas).—Medal: John Cross. Honours: Andrew P. Walker, Reginald N. Macdonald.

Ophthalmic Medicine and Surgery (Dr. T. Spence Meighan).—First Prize: Gavin Muir. Second Prize: James Wilson and James D. McCulloch (equal). Honours: T. Manson, J. B. Stevenson and P. H. Robertson (equal), Alex. G. Clark and John Cross (equal).

Aural Surgery (Dr. James G. Connal).—Honours: J. M. Kelly.

ST. MUNGO'S COLLEGE.—At the closing meeting of the medical classes, held on Wednesday, 25th June, the following medals and honours certificates were awarded:—

Botany (Professor Swanson).—Medals (Systematic and Practical): John M'Arthur. Honours: J. H. Morris-Jones. Gold medal presented by Dr. O'Neill: John M'Arthur.

Practical Chemistry (Professor Menzies).—Medal: William Angus. Honours: William D. Mackay, John M'Arthur, Robert Davidson, James Dunn, John H. Morris-Jones, Adam Cubie.

Forensic Medicine and Hygiene (Professor Galt).—Medal: Robert C. Blyth. Honours: Alex. R. Young, Joseph E. Mullan, James R. Robertson.

Midwifery (Professor Stirton).—Medal: Evan R. Evans. Honours: James B. Patterson, Donald J. G. Grant, John D. Jones.

Practical Pathology (Professor Workman).—Medal: James B. Patterson.

Bacteriology (Dr. M'Crorie).—Medal: William J. M'Donald.

Psychological Medicine (Dr. Hamilton Marr).—Medal: Evan R. Evans. Honours: Robert C. Blyth, John D. Jones.

Clinical Medicine (Professor M'Vail).—Medal: Wm. A. Masson.

Clinical Surgery (Professor Knox).—Medal: Evan R. Evans.

Operative Surgery (Professor Clark).—Medal: J. R. Lewis.

CORONATION HONOURS.—The medical profession in Glasgow has reason to feel gratified with the Coronation list of honours,

including, as it does, the names of Professor Macewen and Dr. Beatson.

We are glad to be able to congratulate Professor Macewen on the knighthood which His Majesty has been pleased to confer on him. The news comes as a surprise to no one, Sir William being well known to the profession throughout the world, and also to many of the public. He first became known in connection with his work on the regeneration of bone, and his experiments in transplantation of the same. His operation of osteotomy for genu valgum holds a high place in the esteem of most surgeons; that for the radical cure of hernia is also well known. Of his subsequent work, perhaps the best known is that on *Pyogenic Diseases of the Brain and Spinal Cord*. We well remember his address on the surgical treatment of brain-abscess, delivered in the Bute Hall of the University, at the meeting in Glasgow, in 1888, of the British Medical Association, and no one who was present can forget the wild enthusiasm of the audience, which included eminent surgeons, British and foreign. We feel sure that our congratulations will be echoed by a wide circle of friends and admirers, and that he may be long spared to enjoy his new distinction is our earnest hope.

We also offer our congratulations to Dr. George Thomas Beatson on his appointment to the Companionship of the Order of the Bath. Dr. Beatson has identified himself very closely with the ambulance movement in Scotland, and it was on his incentive that the Scottish National Red Cross Hospital was raised and sent out to South Africa in 1900. Formerly commanding officer of the Glasgow companies of the Volunteer Medical Staff Corps, he is at present Lieutenant-Colonel Commandant of the R.A.M.C. (Vols.) in this city. The honour which he has just received reflects on the medical volunteers of Glasgow, and we extend our good wishes to them as well as to their popular C.O.

THE local companies of the R.A.M.C. (Vols.) proceed to Netley for their annual camp and training on the first of the month.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The annual excursion of this Society took place on Thursday, 12th June, to Milnathort and Kinross. Through the kindness of Dr. Eben. Duncan, a visit was paid to the new sanatorium in the Ochil Hills. Leaving Queen Street Station at 1.55 P.M., and detraining at Milnathort, the party to the number

of 27 drove in brakes to the sanatorium, and inspected the building. In the electrical rooms a demonstration was given of some of the instruments used in the diagnosis and treatment of various forms of tuberculous disease, including the apparatus for supplying electrical currents of high-frequency and high-potential, the ultra-violet light, and Röntgen rays. At some distance to the west of the sanatorium, the sewage tank is situated, screened off by a belt of trees. The method adopted in the treatment of the sewage is by bacterial purification; and the necessary provision, in the form of a septic tank and four filter beds, with automatic alternating gear, was duly examined. After inspection of the sanatorium the party drove to Kinross, where dinner was served in the Green Hotel.

THE OCHIL HILLS SANATORIUM, KINROSS-SHIRE.—The formal opening of the new sanatorium for the treatment of consumption and other tuberculous diseases took place on Wednesday, 16th July, in presence of a large company of ladies and gentlemen from different parts of Scotland. The guests from Glasgow travelled by special train from Queen Street, leaving the city at 1.35, and arriving at Milnathort shortly after 3 o'clock. Conveyances were in waiting at the station, and the sanatorium was reached at 4. After some remarks from Dr. Ebenezer Duncan, who presided, Dr. Donald Fraser presented a memorial copy of an ancient Scottish key found in Lochleven to Miss Coats, who thereupon, in the unavoidable absence of her mother, Lady Glen Coats, performed the ceremony of opening the door with the key. The visitors then proceeded to inspect the interior of the building, the electrical appliances, and the septic tank sewage system. At 5 o'clock the company sat down to an excellent luncheon purveyed in a large marquee, after which the chairman proposed the health of the King. Professor M'Call Anderson next proposed success to the new sanatorium. Surgeon-General Pinkerton proposed the health of Miss Coats, a toast which was responded to by Sir Thomas Glen Coats. Dr. Donald Fraser proposed the guests, and at the same time paid special tribute to the services of the architect, Mr. Duncan, and the indefatigable secretary, Mr. D. Hill Jack. Dr. Alex. Robertson and Mr. Quarrier returned thanks on behalf of the guests. The party left the sanatorium on the return journey at 7, and reached Glasgow shortly after 9 o'clock.

The Directors have chosen a magnificent site for the institution, which stands on a plateau 800 feet above sea level,

and about half way up the southern slope of the Ochils. The estate extends to 460 acres, and includes extensive stretches of roadway among sheltering trees. The atmosphere is bracing, and, it need scarcely be said, very pure. There are sixty bedrooms for patients, and all these rooms have a southern exposure, the view extending over Lochleven to the hills farther south. The Ochil range protects the building from the north wind. A farm on the estate will supply milk from tuberculin-tested cows. The whole arrangement suggests that no trouble or expense has been spared to make the sanatorium as perfect as possible in every detail. The cost has been put at £35,000. The intention is to treat patients of the well-to-do classes, at a charge of five guineas a week. It is an immense advantage when invalids are within easy reach of their friends, and for Scottish consumptives there is no excuse for going outside Scotland for sanatorium treatment as long as there is a vacant bedroom at the Ochil hills.

NEW PREPARATIONS, &c.

"TABLOID" HYPODERMIC HYDRARGYRI SUCCINIMIDUM, GR. $\frac{1}{2}$ (0.013 gm.) (London: Burroughs Wellcome & Co.)—Mercury succinimide has been said to possess advantages over other salts of mercury for preparing solutions for intramuscular injection. It is claimed that the local irritation it produces is slight. "Tabloid" Hypodermic Hydrargyri Succinimidum, gr. $\frac{1}{2}$, is issued in tubes containing 20.

FRIEDRICHSHALL MINERAL WATER (London: C. Oppell & Co.)—We have received samples of this well-known aperient water, which comes from Saxe Meiningen, in Germany. The spring belongs to the muriated sulphated group, and it is supposed that the common salt in the water allows it to be taken for a longer period than other bitter waters without causing digestive disturbance or general depression. Different analysts have obtained different results in the past, but in recent years the constitution would appear to be pretty constant as regards the principal saline ingredients, viz., magnesium sulphate, 6.2; sodium sulphate, 5.2; sodium chloride, 7.9; and magnesium chloride, 4.9 per mille.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING VIII.—17TH JANUARY, 1902.

*The President, DR. W. G. DUN, in the Chair.*I.—SPINA BIFIDA: ITS OPERATIVE TREATMENT AMONGST
OUT-PATIENTS.

BY DR. JAS. H. NICOLL.

Dr. Nicoll's paper will be found as an original article in our issue for July, 1902, at p. 12.

II.—A CASE OF CONGENITAL STENOSIS OF THE PULMONIC
VALVE IN A GIRL OF 19 YEARS OF AGE.

BY DR. W. R. JACK.

A. J., 19 years of age. The patient complained of palpitation and dyspnoea, to which she has been more or less subject since childhood, but increasingly so in the last four months. She has always suffered more or less when walking fast or in going upstairs, but the attacks have not been at all severe until lately. Even now they do not interfere with sleep, or prevent her lying down. They are influenced by food, and she is appreciably breathless after a heavy meal. There have been no other cardiac symptoms, and, in particular, dropsy has been absent until lately, when there has been some slight swelling of the feet.

The menses came on at the age of 14, but have always been irregular, and sometimes four or five months have elapsed between successive periods. There is no particular discomfort at these times, but the discharge is notably black in colour.

On examination, very marked cyanosis is to be observed, especially in the hands, face, and feet. This condition has been present since birth. It is accompanied by clubbing of the ends of the digits, and curvature of the nails. The feet are slightly swollen.

There is no enlargement of the liver. The heart presents a distinct enlargement of the right ventricle, the right border of dulness being situated to the right of the sternum. A loud V.S. murmur is to be heard over the basal and tricuspid regions, but best in the pulmonic area.

The general development has not been interfered with to any notable extent, although the patient is slightly short in stature.

Dr. Lindsay Steven said he agreed with the view of *Dr. Jack* that there was a stenosis of the pulmonary orifice, and probably a defect of the interventricular septum. He had seen several such cases, but none so old as the girl shown by *Dr. Jack*. In one case the pulmonary orifice was extremely small; the right ventricle was hypertrophied, and there was a communication between the auricles.

Dr. Dun said he saw a case similar to *Dr. Jack's* some years ago, but the boy was only 8 or 9 years of age.

Dr. Jack, in reply, said that he was far from denying the existence of defect of the interventricular septum. The only argument against it was the age of the girl, which was greater than that reached by most of the subjects of combined congenital lesions.

III.—SOLITARY GALL-STONE IMPACTED IN COMMON BILE-DUCT.

BY DR. ALFRED YOUNG.

This first case that I have to bring before you to-night is a fairly typical one of gall-stone impacted in the common bile-duct.

Mrs. M., æt. 37, was admitted to the Western Infirmary on 29th July, 1901. She had been subject for seven or eight years to what she called bilious turns, associated with severe pain in the right side, vomiting, and latterly, also, with jaundice. The attacks had become more frequent and more severe during the last year or two, her general health had become impaired, and she had got much thinner. She described the later attacks as commencing with severe pain and vomiting, shivering following, but no sweating, the attack passing off in a few days, and being followed by a slight and transitory jaundice.

On admission the patient was pale and thin, the conjunctivæ and skin slightly jaundiced, and a slight amount of bile was present in the urine, while the stools were very pale in colour.

The liver was not enlarged, and the gall-bladder could not be detected on palpation. There was no tenderness over the situation of the gall-bladder, but firm pressure midway between the umbilicus and the sternum elicited pain.

The other organs were healthy, and the temperature normal.

On 10th August, in the forenoon, patient had a return of severe pain in the right side, lasting for an hour or so, and this was followed by vomiting, which gave some relief. At 1.30 P.M. she had a severe rigor, with a temperature of 103.4° . At 3 P.M. temperature was 104.2° , and began to subside, but remained over 102° till 10 P.M. By 4 A.M. next day temperature had fallen to 99° , and during the forenoon was 97.8° . The jaundice was noticeably increased after this attack, and bile was found in the urine, but this disappeared after a few days, though the skin still remained tinged, and the fæces clay-coloured.

On 14th August I operated, using Kocher's incision. The gall-bladder was found contracted and very greatly adherent to surrounding parts. In fact, just a small part of the fundus, which was greatly thickened, could be seen at first. I made a small incision into this and inserted a probe, and was thus enabled to separate the adhesions and expose the cystic and common bile-ducts. The gall-bladder presented an unusual hour-glass shape, due probably to the adhesions. There were no stones in the gall-bladder, and the cystic duct was free.

In the common bile-duct, near the duodenum, a concretion, about the size and shape of a hazel-nut could be felt, and the duct was somewhat dilated at this part. The concretion could be moved, to a slight extent, upwards and downwards in the duct, but it was impossible to push it up to the cystic duct, and it felt too hard to be safely crushed. I incised the duct over the stone, and with some difficulty was able to extract it with the help of a pair of dressing forceps. The stone had a mulberry appearance on the outside, and on section proved to be a typical cholesterine concretion.

The duct was then sutured with fine catgut. A tube was fixed in the gall-bladder, which was then sutured to the abdominal aponeurosis, and the wound closed.

Patient suffered from shock, but otherwise made an excellent recovery.

The tube was removed in four days, but a great amount of bile—in fact, I suppose all the bile—came from the fistula for about three weeks, when it suddenly stopped.

Bile began to appear in the stools shortly afterwards, and the patient left hospital about the end of September in a very

satisfactory state of health, having gained considerably in weight. She now feels better than for years. I think the drainage of the gall-bladder was of advantage in relieving any tension that might fall on the recently sutured gall-duct.

IV.—EMPHYEMA OF GALL-BLADDER TREATED BY OPERATION.

By DR. ALFRED YOUNG.

This second case is one of suppuration connected with the gall-bladder.

Mrs. F., æt. 55, was admitted to the Western Infirmary on 14th September, 1901, with a painful swelling in the right hypochondriac region of six weeks' duration. For the last fourteen years she had been subject to attacks of severe pain in the right hypochondriac region and liver, passing downwards to the groin, sometimes accompanied by sickness, but never associated with jaundice nor rigors. These attacks used to occur about three or four times in the year, and rarely confined the patient to bed. They were ascribed to renal colic by her doctor, but there was no history of hematuria.

About a year before admission the pain became more constant, and for the last three months the patient had been confined to bed. While lying in bed she suffered from painful and frequent micturition.

The swelling, which became noticeable about six weeks before admission, latterly became very tender, and poultices were applied to give relief.

On admission the temperature was 101°, but fell later to 100°, and afterwards to 99°. There was no jaundice present, nor had there ever been any. The urine was alkaline, and contained pus, but no blood, and there was undoubtedly some cystitis.

A marked swelling could be seen below the right costal margin, extending from near the linea semilunaris outwards into the flank for about 5 or 6 inches, and for about 4 inches downwards from the costal margin. It was dull on percussion, and fluctuant. The skin was red over it, possibly due to poulticing, but the abscess, which was undoubtedly present, seemed to involve the abdominal parietes though it was not definitely pointing. The lower margin of the liver was masked by the swelling, and on palpating from the loin it did not seem to be connected with the kidney.

On 17th September I made an incision near the outer border of the right rectus, and on starting to separate the

fibres of that muscle pus began to well out. The opening was enlarged, and a large quantity of very thick yellowish-brown pus was evacuated. I put my fingers in and found the abscess wall closely adherent to the under surface of the liver and slightly overlapping its anterior border, which latter could be quite distinctly felt projecting into the cavity. The posterior limits of the cavity could not be made out except to the right, and no concretions were found.

The pus was very thick, and had a soft velvety feeling. No organisms could be cultivated from it, but by microscopic examination some ill-defined diplococci were found, which were possibly disorganised streptococci.

To ensure better drainage a tube was inserted by a stab puncture in the flank about the level of the mid axillary line, and another tube was placed in the anterior wound.

The wounds discharged pus for some time, but latterly the discharge became thinner and gummy, and on examination on 8th October mucin was detected, but no bile salts or pigment.

By the end of October the wounds were quite healed, and the patient went home on 2nd November feeling better than she had done for years, and is now in very good health, and would have been here to-night but for the unsuitability of trains.

This case is somewhat similar to, but associated with, much more severe symptoms than one which I brought before this Society last year. In that case an abscess pointing in the middle line of the abdomen, a few inches above the umbilicus, in a child of 6, was found to be connected with the gall-bladder; there was no fever, no jaundice, and very little pain, and the whole duration of the illness was a few weeks. The pus evacuated was sterile, and contained much mucus. The wound healed up quickly, but was followed by a minute mucous fistula which persisted several weeks, the patient afterwards recovering completely and being perfectly well now. That case I took to be one of catarrhal cholecystitis resulting in abscess.

This present case I take to be one of suppurative cholecystitis from the situation of the abscess and the subsequent discharge of mucin. The history would seem to point to gall-stones as the cause, but none could be found at operation, and I am inclined to think it was a case of chronic or recurrent catarrhal cholecystitis, ultimately resulting in abscess, and analogous to a case of appendicitis. Such cases have been described by Mr. Mayo Robson.

Dr. Nicoll said that *Mayo Robson* had made the statement, some time ago, that if the gall-bladder is contracted and thickened gall-stones are present.

Dr. Archibald Young said, with reference to *Dr. Young's* second case, he was not convinced that he got into the gall-bladder, and he should have expected a different organism from the diplococcus.

Dr. Lindsay Steven said that during the six years he was a pathologist he had seen many cases of contracted and thickened gall-bladder without any gall-stones.

Dr. Dun said he thought *Dr. Young* had not proved that he had got into the gall-bladder.

Dr. Alfred Young, in his reply, said he admitted that the diagnosis was a tentative one, but he had a case a year ago which presented similar characters, and was undoubtedly an empyema of the gall-bladder.

V.—FURTHER REPORT ON A CASE OF SARCOMA OF THE TONSIL
ENUCLEATED TWO AND A HALF YEARS AGO.

BY DR. WALKER DOWNIE.

Mrs. K., who is now in her sixty-first year, was brought before this Society by me on 3rd November, 1899.

On 23rd August of that year I removed, or rather enucleated, her right tonsil under chloroform.

For eight months prior to that date her right tonsil had been increasing in size, and she herself had during that time complained of increasing weakness and exhaustion on exertion, of sharp pains shooting from the right side of her throat up to her right ear, and of thickness of speech.

I saw her for the first time on 17th August, when, being of opinion that she had a sarcoma of the right tonsil, I urged operation without delay, and before the end of the same week the affected tonsil was enucleated.

It was found on microscopical examination (made by *Dr. A. R. Ferguson*) to be a spindle-celled sarcoma, and as such growths frequently remain encapsuled for a considerable period, I was hopeful that enucleation might prevent recurrence. The patient improved markedly after operation, and remained very well until the autumn of 1901, when she observed a slight swelling on the right side of the neck immediately behind and below the angle of the jaw.

I did not again see her after her appearance in this room in November, 1899, until last October, which was an interval of

two years and two months after operation. In October there was a fulness just behind the angle of the right lower jaw. On palpation it was found to be hard and fixed, and to nearly fill the space between the angle of the lower jaw and the tip of the mastoid process.

On examining the mouth there was a small, smooth, rounded projection seen, about the size of the tip of one's little finger, springing from the soft palate at the level of the upper border of the right anterior fauces and close to it. On palpating this and the parts around, the right half of the soft palate and the right fauces were found to be the seat of an infiltration, hard, nodular, and firmly fixed.

There is no appreciable difference between the condition of the parts then observed and what may be seen to-night, and the only additional complaint is that of pain and throbbing in the right ear, and which is always aggravated by lying down.

The woman's general health is fairly good—she is stout and florid—but I think you will all agree with me that operative interference here is not only inadvisable, but is impossible.

VI.—CASE OF EPITHELIOMA OF THE OESOPHAGUS WITH SECONDARY TUMOUR IN THE STOMACH, THE OESOPHAGEAL GROWTH ULCERATING INTO THE LUNG.

BY DR. J. W. ALLAN AND DR. HUGH M'LAREN.

The clinical history of the patient is briefly as follows (the journal notes are by Dr. Pepper, late house physician):—

Thomas L., aged 58, brewery labourer, was admitted to Ward 9 of the Glasgow Royal Infirmary in May, 1901, under Dr. Dougall's care, suffering from pleurisy on the right side. Later, he complained of pain in the left side and back. He was transferred to Ward 1, and afterwards went to the Convalescent Home.

He was readmitted to Ward 1, under Dr. Dougall's care, on 28th July, 1901. In the ward journal there is an entry under date 13th August, 1901:—"Since his readmittance to this ward, it has been noted that he has attacks of great difficulty in swallowing, and that he has a troublesome cough, with little or no expectoration. The possibility of an intrathoracic tumour was considered, but there were found to be no abnormal circulatory signs. The lungs are quite healthy.

Patient was getting 15 grain doses of iodide of potassium thrice daily, to be increased to 20 grains thrice daily.

On 30th August, temperature, which before had been fairly

regular and normal, began to rise, and fluctuated irregularly between 99° and 102°.

12th September.—Great pain in back and whole of left side of chest, and great tenderness on slight pressure. Cough very troublesome, and there is now foetid purulent expectoration.

15th September.—Temperature fluctuating, pain very severe, dyspnoea. Left lung dull to percussion. Dulness most marked behind over lower lobe. Auscultation of anterior aspect revealed increased vocal resonance over upper lobe and moist medium râles. Posteriorly, vocal resonance is increased over upper lobe, but both the vesicular murmur and vocal resonance become diminished more and more from the level of the fourth dorsal vertebra downwards, till they are almost absent at the base. Moist râles posteriorly above level of fourth dorsal vertebra.

27th September.—Left side aspirated, and 12 oz. of rather opaque yellowish fluid withdrawn. This gave patient no relief.

29th September.—Examination showed marked physical signs in the upper lobe not present a few days ago. These are pectoriloquy, tubular breathing of an amphoric character, and coarse bubbling râles.

7th October.—Patient's condition continues very unsatisfactory. He suffers much, and his face looks gaunt and sunken. He manages to swallow milk. Last night even his porridge tended to "stick in his throat" about mid-sternum. Patient has a troublesome cough, and some expectoration. In consideration of all the facts before us, we are led to believe there is a cavity in the upper lobe of the left lung, but the case is somewhat obscure. There does not seem to be any confirmation of the suspicion of aneurysm, though that is still a possibility.

The profuse expectoration which was observed some time (about a month) ago, was not of the character which one might expect from the bursting of a pulmonary abscess. It was profuse, but not sudden in onset. The tenderness on pressure on the left side, both anteriorly and posteriorly in the upper region, is a very marked feature of the case. The patient got gradually weaker, and died on 25th October, 1901.

Dr. Hugh McLaren will give the results of the *post-mortem* examination.

"Our interest in the organs of this case is limited to the œsophagus, stomach, lungs, and arch of the aorta. I shall show you first the œsophagus with the aorta and greater part of the left lung attached to it.

"In the œsophagus, about the level of the sixth dorsal vertebra, there is a growth which encircles the tube and projects slightly into its calibre. The growth on the anterior part of the wall has ulcerated, and the ulceration has extended in front of the aorta into the left lung. The mucous membrane of the œsophagus above and below the growth is studded with small greyish nodules, and the lymphatic glands in the neighbourhood are enlarged and hard.

"The greater part of the left lung is consolidated, and of a greyish colour. In the upper lobe, several small abscesses have formed. This lung was firmly adherent to the chest wall, and you will see that the pleura is considerably thickened.

"There is another tumour in the stomach. It is situated on the anterior wall, close to the cardiac orifice. It is about the size of a hen's egg. At the centre of this mass a quantity of curdy material was found, probably the result of fatty degeneration. I have under microscopes, for the inspection of members, sections from the œsophageal and stomach tumours, and also from enlarged lymphatic glands from the neighbourhood of the œsophagus.

"In the section from the œsophagus, you will notice that the mucous membrane is almost entirely replaced by masses of large flat epithelial cells, and that masses of similar cells have penetrated the muscular coats.

"The section from the stomach tumour is also composed of elongated masses of large flat epithelial cells, which are separated by more or less connective tissue.

"The epithelial cells in the two tumours appear similar, and my opinion is that the stomach tumour is secondary to the œsophageal tumour. Some cells have probably been separated from the œsophageal growth, carried down the œsophagus, and planted on the mucous membrane of the stomach.

"The section of the lymphatic gland presents masses of large flat epithelial cells.

"I have also examined sections from different parts of the lung, and I find the alveoli filled with leucocytes and catarrhal cells.

"Except for a small pear-shaped aortic aneurysm which is present in the first part of the aorta, none of the other organs present any unusual appearances."

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING VIII.—26TH MARCH, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

LANTERN DEMONSTRATION.

A. BY DR. THOMAS H. BRYCE.

Dr. Bryce demonstrated the following:—

1. A series of photomicrographs of his preparations by Dr. J. H. Teacher, illustrating the maturation and fertilisation of the egg of the common sea urchin.

2. A further series, showing the segmentation stages of the egg in the same animal up to the sixteen-cell stage.

3. A complete series of preparations, shown by the projection microscope, illustrating the formation of the chick embryo, from the stage of the "primitive streak" to the forty-eighth hour, and completion of the embryonal axis.

4. In comparison with the last, a series of photomicrographs of sections of a double chick embryo of six somites, to demonstrate the anatomical characters of "duplicitas anterior"—a somewhat rare condition in the bird.

B. BY DR. JOHN LINDSAY.

Dr. Lindsay gave a demonstration illustrating the influence of albuminuria in the mother on the development of the embryo. He showed photographs of two embryos, both from the same patient, and both believed to be about the same age—viz., five or six weeks. One of them was greatly malformed, the other normal. The malformed embryo was aborted while the patient was suffering from albuminuria; the normal one when free from this complaint. The former measured 2.6 mm.; the latter, 6.3 mm. The malformed one was smaller than an embryo of fifteen days which was shown for comparison. That it had not been retained dead *in utero* was proved by photomicrographs taken with a high power, in which the nuclei and cell outlines could be seen clearly defined; while the effects of maceration were seen in the blurring of the structures in sections from the larger embryo.

A series of sections from the malformed embryo were then thrown on the screen to display the internal anatomy. From these it appeared that the nervous system was ill-developed. The heart was entirely absent, the gut was greatly distended, and there was only one Wolffian body. A section through the coverings of the ovum exhibited the allantois in contact over a large extent of the chorion, but having no organic connection with it.

MEETING IX.—23RD APRIL, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

I.—SPECIMENS.

A. BY DR. JOHN EDGAR.

Dr. Edgar showed a papyraceous foetus from a twin pregnancy. This specimen was kindly sent to him by Dr. Burges, who stated that the patient was a vii-para, labour being due on 17th March. The confinement did not, however, occur till this morning (23rd April). During the previous month the patient complained daily of slight labour pains. There was a considerable amount of liquor amnii, and the child, a male, was alive, healthy, and much larger than normal. A second foetus was found on examining the membranes. The specimen shown consisted of a well-developed and healthy placenta with the membranes still attached. Three inches from the placenta a flat circular thickening was evident, which proved to be a second placenta, pale, evidently fatty, and measuring 5 inches in diameter. Close to this was another thickening of an irregular shape, 6 inches long, 2 to 3 inches broad, and a quarter of an inch at the thickest part. This was the foetus papyraceus. It was enclosed in a separate amniotic sac, but with no liquor amnii. The amnion was adherent to both surfaces of the foetus. On stripping it off, the body of the foetus was found to be compressed antero-posteriorly. The head had rotated so as to look over the right shoulder, in which position it had been compressed laterally, showing the face in profile. The head measured $2\frac{1}{2}$ inches vertically, 3 inches antero-posteriorly, and one-eighth of an inch in

thickness. The arms and legs were flexed, and also parchment-like. The legs measured $2\frac{1}{2}$ inches in length, the upper part of the body 2 inches, the lower part an inch and a half transversely. The umbilical cord, still present, was, like the foetus, flattened. The death of the foetus probably occurred at four and a half months.

B. BY DR. A. W. RUSSELL.

Dr. Russell showed a double-channelled glass tube suitable for rectal douching. A glass partition in the tube guided the solution to perforations at the distal end, while several larger openings near the distal end on the opposite side allowed of a return flow to an exit at the proximal end of the tube, which could be stopped at will by a finger of the hand holding the instrument.

II.—CANCER OF THE CERVIX UTERI IN A CASE OF ADVANCED PREGNANCY: ABDOMINAL HYSTERECTOMY.

BY DR. A. W. RUSSELL.

Matthews Duncan long ago remarked that there was "scarcely any disease, however formidable or however loathsome, in spite of which sexual intercourse and conception may not take place;" but the conditions favourable to the progress of pregnancy to the full time in a cancerous uterus can very seldom be present, and such cases are therefore rare. Cancer of the body of the uterus probably always prevents development of the ovum. It is not so with cancer of the cervix, which has been found to occur as a complication of pregnancy once in about 2,000 cases (22 in 41,000, according to Scheibe), and there are already several hundreds on record. Cohnstein reported 134 cases up to 1873, and Theilhaber collected 165 cases between 1873 and 1894. Olshausen, Fehling, and Noble, amongst others, have reported groups of cases. Leinzinger has also recorded a case in which pregnancy took place even after curettage for well-marked carcinoma.

A large proportion end in abortion (Cohnstein, 29 per cent; Müller, 34 per cent; Lewers, 40 per cent), and this takes place usually about the third month (Hauke).

Cancer of the cervix uteri complicating advanced pregnancy is of rare occurrence, and it involves much more serious issues. The patient whose case I wish to describe, and whose uterus I now show, had reached the end of the sixth month of her

first pregnancy. She was 46 years of age, and had been married less than a year. On 4th October, 1901, she had a sudden and alarmingly profuse hæmorrhage, which was checked by plugging the vagina. As serious hæmorrhage recurred the following day, I was asked by her medical attendant, Dr. A. A. F. Steen, to see her. The first thought was naturally of placenta prævia, but vaginal examination discovered at the cervix uteri a dense hypertrophied posterior lip with rough surface, and there was an offensive vaginal discharge, the odour of which was perceptible even in the air of the room. The pregnancy had reached the beginning of the seventh month, but patient was not conscious of anything amiss up to the end of August, after which she began to observe a little malodorous discharge. The disease, though well marked, was definitely localised in the posterior lip of the cervix. We decided to recommend immediate operation, and not wait for a viable child.

The vagina was douched, and afterwards well plugged with iodoform gauze steeped in hazeline. The patient was removed on 7th October to a private nursing home. Unfortunately, during the following night another very serious hæmorrhage took place, the blood running beyond the rubber sheeting, saturating the bed mattress, and reaching the floor. The risk of further hæmorrhage seemed as serious as the danger of operation, so we decided to operate two days afterwards, and to remove the uterus and its contents without preliminary Cæsarean section. It was found that the uterus, on account of its elasticity, could be drawn through a comparatively small abdominal incision. The patient was put in the Trendelenburg position. The ovarian arteries and the round ligaments were tied in the usual way with catgut, and the uterus so far separated from its lateral attachments. The bladder was then reflected, and the uterine arteries were secured. At this stage specially wide sterilised lint guards were spread behind the uterus right into the hollow of the sacrum, and covering the whole of the intestines above. As the bulk of the uterine tumour interfered with us, a strong silk ligature was tied round the cervix, and the uterus was amputated below it. The cervical stump was then as quickly as possible excised. The abdomen was well flushed with warm saline solution, which discharged itself by the vaginal opening. Iodoform gauze was drawn through the vagina, and then the abdominal wound was closed. The operation took quite an hour and a half, but it involved comparatively little hæmorrhage. The previous severe losses of blood, however, together with the

shock of such an operation, seemed to prove too much for the patient, as she did not rally very well; and, in spite of stimulation and watchful nursing, she became weaker again during the later hours of the night, and died on the afternoon of the next day. There are several important points that deserve consideration:—

1. *The diagnosis.*—Although this was an early stage of cancer, it was not difficult to diagnose it. There had been no previous hæmorrhage and no pain to warn the patient—only the malodorous discharge for some six months previously, and that should itself have excited suspicion. Though I believe that in this case the cancer developed entirely after conception had taken place, the result might have been very different if operative treatment had been possible before the exhausting hæmorrhages had taken place.

2. *The age.*—It has been noted in statistics that where carcinoma and pregnancy coexist, the patients are, on the average, much younger than those in whom carcinoma alone is present. Most of these patients, however, were multiparæ. In this case the patient was only recently married, and it was her first pregnancy. It is probable that the growth may have been encouraged by the change in her mode of life, involving greater congestion and activity of the sexual organs.

3. *The operation.*—As the disease was limited, and radical operation seemed possible, I felt myself bound not to consider the life of the child, so I had no difficulty in deciding not to delay till the child was viable. The patient and her husband confirmed this. I had to choose between the vaginal and the abdominal routes, and took the latter because I feared the risk of greater hæmorrhage by the vaginal method at this stage of pregnancy. I decided not to do a preliminary Cæsarean section, because the child was still small, and I was sure that I could get the elastic uterus through a comparatively small abdominal wound. Although the operation was not successful, I am satisfied that I took the right course. In undertaking so serious an operation at a time when the patient is not in the best condition for it, from previous loss of blood and other drain on the strength and interference with nutrition, it is the surgeon's duty to see that every precaution is taken, and among the important questions is the choice of the anæsthetic, and I regret that I did not use ether in such a case as this. I also regret that I did not give an intracellular intravenous saline injection instead of contenting myself with the saline solution in the abdominal cavity, much of which soon escaped by the vagina. If these additional

precautions had been taken, it might have made all the difference to the heart's action, and the patient might have been saved.

III.—TWO CASES OF FUNGATING ("CAULIFLOWER") CANCER OF THE CERVIX UTERI: VAGINAL HYSTERECTOMY.

By DR. A. W. RUSSELL.

Cases of cancer of the cervix and the operations for its removal are now familiar to all of us, and we have more than once specially discussed the subject in this Society; but to-night I wish to report the following two cases, because they specially illustrate the advantage of radical treatment in cases which are at first judged to be too far advanced for operation.

CASE I.—Mrs. M'G., 33 years of age, had had seven pregnancies, the first five of which went to full time; the next, three years ago, and after an interval of three years, was an early abortion; and the last terminated two months ago in a premature labour at the eighth month, the child living only two days. She complained of irregular vaginal hæmorrhage, alternating with a yellowish and latterly malodorous discharge since the last confinement, two months ago. On 14th June, 1901, she was sent into the Samaritan Hospital by Dr. Douglas from the dispensary on account of malignant disease of the cervix. The vaginal roof was filled with a cauliflower growth, involving the whole cervix. The body of the uterus was small, movable, and apparently uninvolved.

Under chloroform, on 19th June, 1901, the cancerous material was thoroughly curetted, and pure formalin was applied to the raw surface, the vagina being afterwards packed with iodoform gauze which had been wrung out of corrosive sublimate solution (1 in 2,000). A fortnight later the patient was carefully examined, and had improved so much that it was decided at a consultation to attempt radical treatment. On 4th July, vaginal hysterectomy was performed. Only one or two special points need to be mentioned. An incision was made in the vaginal walls, round, but well clear of, the diseased tissue. The mucous membrane from this circumference was dissected towards the cervix, and the circular flap thus raised was stitched firmly across the diseased area, covering it in. Silk ligatures were used to secure the broad ligaments as they were cut through, and the ends of the

ligaments were gathered into the vagina and secured in the angles of the wound by means of one or two catgut sutures, after the pelvic cavity had been flushed with a warm saline solution through a double-channelled tube. A temporary iodoform gauze drain was inserted into the middle of the wound. She made a good recovery, and went home on 30th July.

This patient, who was in attendance in an adjoining room, had consented to be examined by two of the Fellows, and this was done by Drs. Stark and MacLennan.

CASE II.—Mrs. C., widow, aged 57, has had six children, and has always enjoyed good health. The menopause came at least six years ago. There has been irregular vaginal hæmorrhage for the last four months. On account of this bleeding, she was urged by her medical attendant, Dr. Lewis, six weeks ago to get special advice, and had consented, but a temporary improvement tempted her to postpone the consultation. There is now a purulent blood-tinged discharge from the vagina, and the odour is offensive. The cervix is hypertrophied and irregular in contour, owing to sprouting masses of malignant disease which readily break down and bleed. The disease extends specially along a laceration backwards and to the left. Her general health has suffered, and she has of late become thinner and weaker from loss of blood. The friends were advised that the diseased structures should be removed by curettage to save from further bleeding, and they were told that the case was not very hopeful for radical treatment. Next day the cervix was curetted, as already described. The examination under chloroform encouraged us to believe that the disease had not invaded the deeper tissues. After careful examination on 15th September, vaginal hysterectomy was recommended. On 21st September, the uterus was removed in this way, the same method being followed as I have described already. There was considerable difficulty in excavating the disease at the apex of the laceration on the left side. On 28th September, the vaginal discharge was distinctly foul smelling, and a careful search was made for any gauze packing that might have been left in vagina. This was found next day. Iodoform pessaries were now inserted daily. On 4th October, the ligatures were carefully detached, as the odour had not completely disappeared, and patient left the Nursing Home on 7th October.

On 9th October, as the discharge continued, I again searched specially on the left side where it had been necessary to

excavate, and I found still a small piece of very foul-smelling gauze. On removing this and cleansing the vaginal wall, the wound healed up in a day or two, and there was no further trouble.

I have seen the patient to-day (26th March), and have examined her. There is no evidence of recurrence; her general health has greatly improved, so that she is now fit for every ordinary domestic duty.

Remarks: Early Diagnosis.—Both of these cases are a lesson regarding diagnosis. In the first there were suspicious symptoms for at least a month before her admission; while, in the second, a consultation had been proposed at an earlier stage of the disease, but had been postponed. Skilled advice should be sought without delay whenever there is even slight irregular hæmorrhage.

Preliminary curettage and the efficacy of formalin in cases that are doubtful as to radical operation.—In both of these cases this preliminary treatment arrested the progress of the disease, and enabled us to decide deliberately as to further procedure.

The advantage of giving the patient the benefit of radical treatment.—This is to me the most striking lesson of these cases. Both were apparently hopeless cases, already in a miserable condition of health owing to repeated hæmorrhages and foul and extremely disagreeable discharges. After the operation they quickly regained strength, and now, after nine months and seven months respectively, they are in good health and able for the ordinary routine of domestic life, and, as they themselves declare, stronger than they have been for years, while there is in neither case at this date the slightest indication of recurrence. I do not report them as cases of cure, but to prove that, whether the disease ultimately returns or not, the operation has already been justified by the comfort it has secured for them.

Dr. A. W. Russell then showed the following instruments used by Pryor for hysterectomy:—(1) Forceps for securing the broad ligaments, (2) trowel-shaped anterior retractor, (3) three-pronged blunt bullet forceps, (4) intrauterine traction forceps.

Dr. J. Edgar agreed with what Dr. Russell had said regarding the importance of early diagnosis and treatment. He had seen the first patient before operation, and again two or three

weeks ago, so he could corroborate the statements with regard to her. He did not agree with what Dr. Halliday Croom had said some time ago, that hysterectomy in cases of cancer was worse than useless. As a preliminary to hysterectomy, he found curettage and application of formalin of considerable service. He had never seen a case of cancer of the gravid uterus. In such, he should in all probability prefer the vaginal route in operating.

IV.—A SARCOMATOUS ENCHONDROMA OF THE PELVIS DURING PREGNANCY.

By DR. ROBERT JARDINE.

Mrs. H., i-para, æt. 29, was sent into the Maternity Hospital from one of the mining towns near Glasgow. She had been under the care of a medical man for some six weeks, but he sent no history of the case, and even did not condescend to reply to a letter of enquiry sent him some days later. Unfortunately, we rarely receive a word of explanation along with the bad cases sent in.

Mrs. H. had been married for nine years. She was now pregnant about seven months for the first time. Her health had been good until she became pregnant, except that she had suffered from pain of an intermittent character in the back of both thighs for two years, particularly during the winters. When three months pregnant the pains in the thighs became worse, and about three months ago the right thigh began to swell. With the onset of the swelling, the pain in the right thigh became much more severe. The swelling of the right thigh gradually increased, and six weeks ago she had to take to bed. Since then, the swelling has increased, and at times the pain has been almost unbearable. For some time she has only been able to lie on her left side, and occasionally on her face. A pressure sore has formed over the left trochanter. The patient has lost flesh considerably.

Condition on admission.—The patient was pale and emaciated. She complained of severe pain in the back of the right thigh, and in the right side of the abdomen. The right leg was enormously swollen and œdematous, more especially the thigh and hip. The swelling extended up as high as the iliac crest behind and in front. A distinct swelling could be made out in the abdomen above the iliac crest, almost half way up to the umbilicus. This swelling was quite distinct from the uterus, and was apparently

attached to the ilium. It was particularly tender in the right inguinal region. The uterus was displaced towards the left side, and quite free from the tumour. The head of the child could be palpated lying to the left just above the pelvis. The foetal heart sounds were easily heard—strong, but rather rapid. On inspecting the labia, they were found to be free of oedema. On attempting to pass a finger into the vagina, the passage was found to be obstructed by a hard globular mass growing from the right of the pelvis. The pain was so great that the attempt had to be given up.

Next day I made a thorough examination under chloroform. The tumour was found to occupy the greater part of the pelvic cavity—growing from the right side, apparently from near the sacro-iliac joint. The finger was introduced past the mass with difficulty, but the cervix could not be reached. The vaginal mucous membrane was freely movable over the mass, which was soft and almost fluctuant at some points, and at others quite hard. A rectal examination confirmed the observations made *per vaginam*. A small hard nodule was made out in the anterior uterine wall near the fundus. On passing a catheter, the instrument went in obliquely to the left.

My diagnosis was that we had to deal with an osteo-sarcoma springing from the right side of the pelvis.

The prognosis was hopeless as regarded the mother. The child was still alive, but, as the pregnancy had barely reached the seventh month, it was very doubtful if an immediate Cæsarean section would give a viable child. I decided to wait until there was a chance of getting a viable child. The tumour, I was quite sure, could not be removed.

The consulting staff of the hospital saw the case. Dr. Cameron quite agreed that it was a sarcoma, and that I ought to wait to give the child a chance. Drs. Reid and Sloan both suggested the possibility of the tumour being a simple one. They agreed with the proposed treatment.

As we failed to get any information from the doctor who had attended her, we questioned the husband to see if we could form any idea of the rate of growth. He informed us that he had last had connection about three months ago, and that for about a month previous to that he had occasionally experienced slight difficulty. This difficulty had not been very marked, and had not been experienced at any time previous till about four months ago. The rate of growth must therefore have been very rapid.

The patient was made as comfortable as possible by the

use of opiates to relieve the pain. The bowels were obstinately constipated, and only relieved by aperients and enemata. There was a slight trace of albumen in the urine.

It was quite evident that the tumour was steadily growing. The swelling of the leg increased, and the vulva became œdematous. As the patient was evidently steadily losing ground, it was determined to do Cæsarean section on the ninth day after admission. Two days before the operation was done the foetal heart was quite distinct, but it could not be heard on the following evening.

Dr. Reid kindly gave me his advice during the operation, and Dr. Gibson assisted me. The abdominal wall was very œdematous, and the veins in it much engorged. The uterine incision was made in the anterior wall, and the placenta lay beneath it. It is rather curious that, of the last nine or ten sections I have done, I have had to go through the placenta in every one. The child was stillborn. Its head showed moulding from the pressure of the tumour. When the placenta and membranes were removed, there was a considerable amount of decidua lining the uterus, and this was swabbed out. On passing the hand into the uterus, it was found that the cervix would allow of drainage, so it was decided to stitch the uterus. A small fibroid tumour was removed from the edge of the incision. The uterus was flabby, but there was very little bleeding. A hypodermic of ergotin was given, and a saline injection under the breast. On examining the tumour, it was found to block the pelvic cavity, and to extend up the right side of the abdomen to about the level of the umbilicus anteriorly. The upper part was rounded, and quite soft. It was completely retroperitoneal, springing from the side of the pelvis. The broad ligament was opened up by it behind. The operation was finished by stitching the peritoneum and then the abdominal wall.

The patient rallied from the operation towards the evening, but cardiac failure began to manifest itself, and she died twenty-four hours later. At the time of the operation, the temperature was 102·4° F. It had been normal the evening before.

The *post-mortem* examination was done by Dr. Carstairs Douglas.

The right labium majus was enormously swollen and engorged; the left little affected. There was also some œdema of the abdomen and groin in the right iliac region. On the right side the abdomen was more prominent in its

lower part than on the left, and on palpation it felt distinctly more resistant.

The thorax presented nothing of special note. The heart was small, but apparently healthy. Both lungs were œdematous, and showed evidence of distinct passive congestion in their lower and posterior portions.

On opening the abdomen and carrying the incision through the wound, some serous fluid of a straw colour escaped. The parieties at the wound were rather soft, pulpy, and œdematous. There was no pus present. There was a commencing slight adhesion between the uterus and the parieties. The peritoneum appeared quite normal. The uterus was lying well up in the abdomen, the fundus as high as the umbilicus. On its anterior and upper part was a firmly sutured wound about 5 inches in length. The tubes and ovaries were healthy, the right ovary slightly enlarged. The bladder was moderately full.

On reflecting the abdominal parieties, it was at once apparent that the right half of the false and true pelvis was filled with a large pathological mass. This was rounded and nearly smooth on its superior, anterior, and inner aspects. The upper part was of a bluish tint, and felt soft and baggy. Its lower part was firmer and more flesh-tinted. It lay beneath the peritoneum on the posterior abdominal wall and pelvis. The dimensions were as follows:—

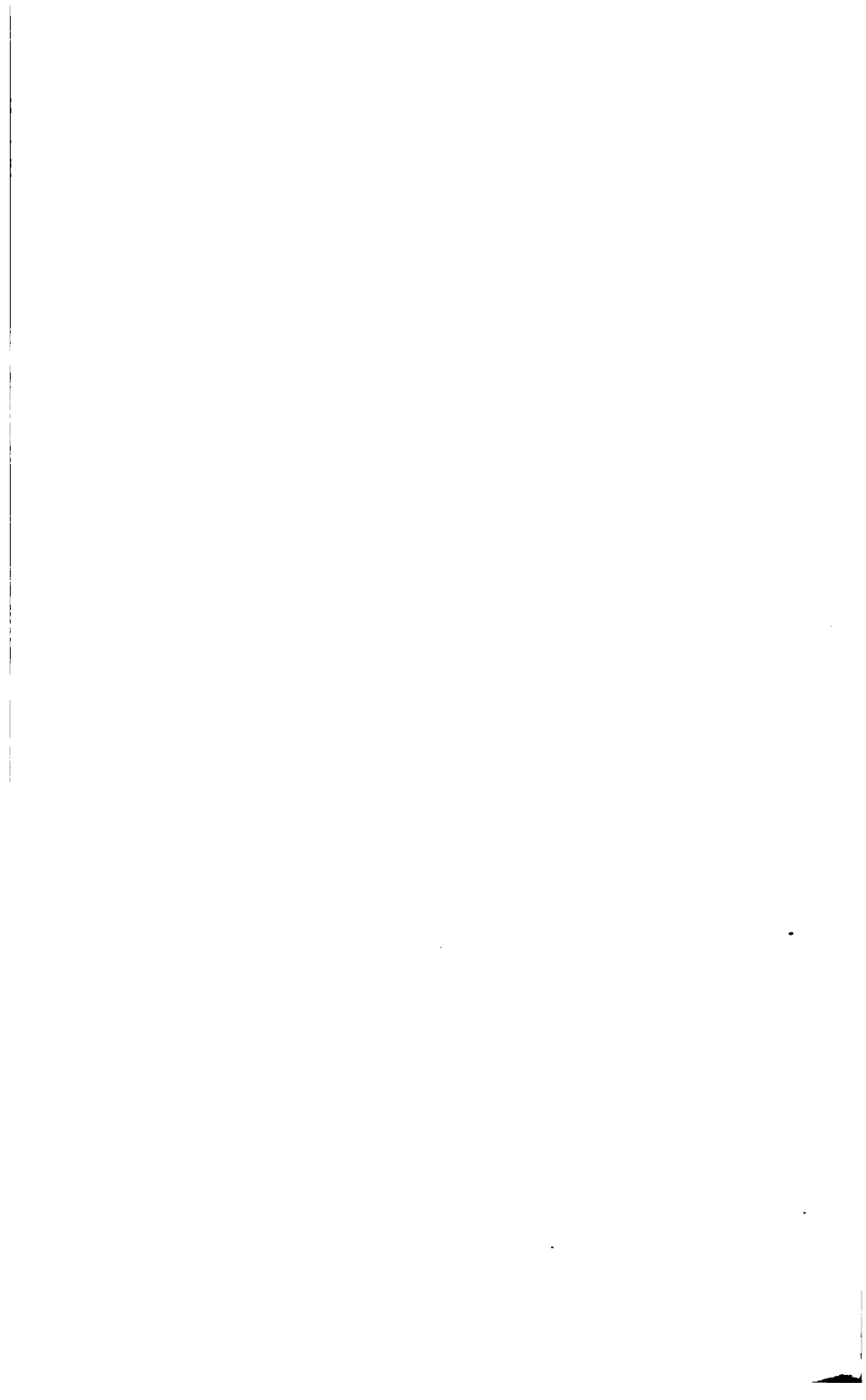
1. Superiorly, it rose to the tip of the eleventh rib and slightly above the umbilicus (about the level of the second lumbar vertebra).

2. Anteriorly, it grew forwards sufficiently to make a prominence in the right iliac region.

3. Internally, it reached the middle line at the level of the promontory of the sacrum. Above this, it gradually receded from the middle line of the body, while in the true pelvis, near the outlet, it rather exceeded this limit.

4. Posteriorly and externally, it was continuous with the pelvic wall.

5. Inferiorly, it was found on removing the whole pelvis that it had grown down under the pelvic arch; that it had incorporated in its substance practically all the upper part of the ischium and of the pubis and the ilium near the acetabulum. It had grown out of the pelvis also at the great sacro-sciatic notch, and had so eaten through the bones just behind the acetabulum that the ilium here had become quite detached from the ischium and pubis. The lower part of the growth was more osseous than the upper, and contained many large spaces, some of them full of blood. It was





Sarcoma of the pelvis.

very fragile and easily crumbled. There was no distinct capsule, a thin line of tissue being described as it bent it projected in a regular manner into the tissues of the thigh in its lower part. One or two small glands were observed along the right Pott's ligament. Some enlarged retroperitoneal glands were also found. No metastatic growths were detected. The right ureter in its course to the bladder, was stretched over the tumour.

The spleen, kidney, and other abdominal organs showed nothing of interest. The liver was large pale and fatty.

The entire pelvis and tumour was removed and brought to you, and also an admirable drawing which Dr. Lindsay has kindly made (see illustration). To the left is seen the uterus with the bladder below it. The tumour crosses the right side of the pelvis. The dotted line indicates the upper limit of the tumour at the time of operation.

The following is the report of the microscopic examination of the tissues, made by Dr. Douglas:—

"The microscopic examination of the growth showed it to be composed almost entirely of large, rapidly-growing, anaplastic cells, with here and there small groups of cells suggestive of sarcomatous degeneration. There were also cystic spaces, so it may be an ordinary enchondroma with cystic spaces, or with sarcomatous degeneration, or both."

It is impossible to decide when this tumour first began to grow. It may have been there before conception, and the pelvic pains would point to the nerve having been affected during the last two years. If it was there at the beginning of the pregnancy, it is quite certain that its rate of growth became very rapid after impregnation. The growth may have been simple to begin with, but there is no doubt of its malignant character finally, although it is difficult to demonstrate sarcomatous cells in it.

I regret that I did not operate a couple of days sooner, as there would then have been a slight chance of saving the child's life, but we had no warning of its impending death. I do not know what caused its death.

I am deeply indebted to Dr. Campbell Macdonald for his careful notes of the case; to Dr. Lindsay for his drawing; to Dr. Douglas for the pathologic report, and also to Drs. Reid and Gibson for their assistance in the operation.

(The report of this Meeting will be continued in our next issue.)



Sarcoma of the pelvis.

very fragile, and easily crumbled. There was no distinct demarcating line of tissue to circumscribe it, but it projected in an irregular manner into the tissues of the thigh in its upper part. One or two small glands were enlarged along the right Poupart's ligament. Some enlarged retroperitoneal glands were also found. No metastatic growths were found. The right ureter, in its course to the bladder, was stretched over the tumour.

The spleen, kidney, and other abdominal organs showed nothing of interest. The liver was large, pale, and fatty.

The entire pelvis and tumour was removed, and I now show it to you, and also an admirable drawing which Dr. Lindsay kindly made (see illustration). To the left is seen the sutured uterus with the bladder below it. The tumour mass projects through the right side of the pelvis. The dotted line indicates the upper limit of the tumour at the time of operation.

The following is the report of the microscopic examination of the tissues, made by Dr. Douglas:—

“The microscopic examination of the growth showed it to be composed almost entirely of large, rapidly-growing cartilage cells, with here and there small groups of cells suggestive of sarcomatous degeneration. There were also cysts at places, so it may be an ordinary enchondroma with cystic changes, or with sarcomatous degeneration, or both.”

It is impossible to decide when this tumour first began to grow. It may have been there before conception, and the sciatic pains would point to the nerve having been affected during the last two years. If it was there at the beginning of the pregnancy, it is quite certain that its rate of growth became very rapid after impregnation. The growth may have been simple to begin with, but there is no doubt of its malignant character finally, although it is difficult to demonstrate sarcomatous cells in it.

I regret that I did not operate a couple of days sooner, as there would then have been a slight chance of saving the child's life, but we had no warning of its impending death. I do not know what caused its death.

I am deeply indebted to Dr. Campbell Maclure for the careful notes of the case; to Dr. Lindsay for his admirable drawing; to Dr. Douglas for the pathological report; and also to Drs. Reid and Gibson for their assistance at the operation.

(The report of this Meeting will be continued in our next issue.)

REVIEWS.

The Healing of Nerves. By CHARLES E. BALLANCE, F.R.C.S., and PURVES STEWART, M.D. London: Macmillan & Co. 1901.

THIS volume is the result of the investigation of the problems of regeneration and degeneration in nerves after section, with or without subsequent suturing of the segments; the changes which occur in nerve-grafts have also been studied and are here described.

The experiments were carried out on monkeys, dogs, and cats, and additional specimens were obtained from operations on the human subject. In stating their general conclusions, the authors place themselves in what they term the "peripheral" school of Tizzoni, Kennedy, Galeotti and Levi, and others—i.e., they adhere to the view that the distal segment plays an active part in regeneration of the nerve after division, with or without immediate suture.

After division, whether followed by suture or not, degeneration occurs in the distal, and, to a less extent, in the proximal segment. There is an invasion by leucocytes, which are subsequently replaced by proliferated connective-tissue cells which remove the disintegrated myelin-sheaths and axis-cylinders. As the fatty *débris* becomes absorbed, proliferated neurilemma cells outnumber the connective-tissue cells, which, when both myelin and axis-cylinders have disappeared, become elongated and form fibrous tissue. Regeneration of axis-cylinders and myelin-sheaths is carried out by neurilemma cells, and occurs in both proximal and distal segments; should the nerve-segments remain ununited, the development of the new structures does not pass beyond the "beaded" stage. In the case of nerve-grafting, the graft undergoes degeneration. Regeneration is from neurilemma cells, which come from proximal and distal segments, and which enter the graft alongside the invading blood-vessels. The graft is merely a scaffold.

In conclusion, the authors discard the neurone theory so far as the peripheral nervous system is concerned; they look on that system as being made up of chains of cells, set end to end, whose axis-cylinder-processes fuse together to form continuous paths—the peripheral axis-cylinders.

The work deals with 140 "observations." Of these, 37 are concerned with myelin-sheaths, 48 with axis-cylinders, and the remainder with cellular elements (leucocytes, connective-tissue cells, and neurilemma cells). The detailed "observations" and the "commentaries" thereon will prove very valuable to the laboratory worker, while the "general conclusions" are of great interest to the practical surgeon.

The volume is printed in large type and in a style lamentably rare in present-day medical treatises; the text is suitably illustrated by many beautiful coloured plates from drawings by Mr. Lapidge of sections prepared by Dr. Stewart. The volume will stand as a valuable contribution to the subject of nerve-healing.

Manual of Practical Anatomy. By the late PROFESSOR ALFRED W. HUGHES. Edited and Completed by ARTHUR KEITH, M.D. Parts II and III, completing the Work. London: J. & A. Churchill. 1902.

PART II, dealing with the thorax and abdomen, maintains the high standard of its predecessor. There are four coloured plates, of which one is new—viz., that illustrating the anatomy of the femoral sheath. There are, however, 149 figures in the text, and of these, one-third are by the editor. The illustrations will undoubtedly help to a clearer understanding, by the student, of the mysteries of, amongst other parts, the triangular ligament, mediastinum thoracis (Fig. 237), coverings of spermatic cord (Fig. 144), fold of Douglas (Fig. 135). The matter is well written, but one finds a discrepancy between the description of relations of kidney to arcuate ligaments and Fig. 178; in the figure the ligaments are in contact with the infracostal area of the organ.

Part III is concerned with the head and neck, and is illustrated by 12 plates and by 200 figures in the text. The latter is very good, full but not cumbersome, and the details of the subject are so put as to be easily grasped, and remembered, by students; this is exemplified in the description of the muscles of the back, a proverbially "stiff" region for the student to master. The illustrations are of very variable quality; very many are excellent (*e.g.*, those of the triangles of the neck) others are good, but in several instances (*e.g.*, Figs. 282, 368, 369, 373, 413) too much has been attempted in the way of detail, the outlines and shading are too thick, and the reference pointers are so numerous as to materially

confuse the reader. Plate XLIX, showing intracranial stages of cranial nerves, is beautifully executed; but, from the student's point of view, it would have been well to have numbered the nerves on both sides. In the editor's note to this part, acknowledgment is made of Professor H. E. Clark's osteological plates, wrongly ascribed in Part I to Mr. Holden.

We fail to see the advantage of the incisions for raising the scalp, and it seems to us that the removal of the brain is left till very late in the day. We see no reason why, without damaging the scalp for dissection, it should not be removed earlier for better preservation.

Taking the completed work into review, one must acknowledge that it is a great advance on anything in this department previously presented to the student. Dissectors of the past generation will look on these volumes as part of the increasing luxury of the age; but if used as intended—viz., in the dissecting room, and not as a substitute for individual dissecting—they should help in the production, not of decadent machines, stuffed and crammed, but of practical men.

Angels that are to be. Letter No. 1 to Young Wives and Mothers.

Whose is this Image and Superscription? Letter No. 2 to Young Wives and Mothers.

Vision of the Ideal: An Appeal to Mothers with grown-up Daughters. London: The Cable Printing and Publishing Co., Limited.

WE could wish that every expectant mother had the opportunity of saturating her mind with the teaching inculcated in these two letters by Lady Loraine. Interesting as regards their contents, attractive in their style, and sound in their doctrine, they are written by one who is obviously eager for the highest good of wives and mothers and the coming race.

The first letter is based on the principle that the expectant mother is in the position of a godmother to her expected child, with a very potent influence for good on the life and character of her offspring. In the second letter, hints are given as to the management of mind and body during the period of waiting, and mothers are encouraged to be unselfish for the sake of the little one that is coming. The parable of the

Sleeping Beauty is placed after the text of the letter, and after this there is a collection of twenty-two *Rules for Expectant Mothers*. Those rules are righteous, wise and chaste. They are available in separate form on a card which may be hung in the bedroom at home, or in the wards of maternity hospitals.

The Vision of the Ideal calls attention to the importance of education, and to the great responsibility that rests upon mothers. It is recommended that where mothers' meetings are held, special instruction should be provided for those who are expecting children, and useful hints are given as to the direction which such instruction should take. It is also recommended that mothers should take their daughters into their confidence, as far as they think right, before the question of being married arises; so that they may possess in good time some idea of the responsibilities which attach themselves to wedded life.

In these little works, Lady Lorraine will appeal to all sensible wives and mothers. Those who keep a high ideal before them will be encouraged; the ignorant will get much needed instruction; and some to whom a warning is more necessary may also profit.

Practical Surgery for the General Practitioner. By NICHOLAS SENN, M.D., Ph.D., LL.D. London: W. B. Saunders & Co. 1901.

THE name of the author of this book is sufficient guarantee of the quality of the work. It is entitled *Practical Surgery for the General Practitioner*; while the practical nature of its contents cannot be denied, we feel certain that the general practitioner will have little satisfaction if he uses it as a work of reference. There is no attempt to produce a systematic treatise. There are many notable omissions; to take a few at random, we find no mention in the text of acute osteomyelitis, spina bifida, diseases of the breast, separation of the epiphyses; while, again, although one-fourth of the whole book is taken up with fractures, the reader will find that only fractures of the neck of the femur and Colles' fracture of the radius are dealt with in detail, and no special indication whatever is given as to treatment of any other fracture.

But to the general surgeon we have every confidence in commending this latest work of Senn. In our judgment, the chapters dealing with abdominal surgery are of immense

worth. At first, when reading them, one is irritated somewhat by losing oneself amid five different and detailed classifications of peritonitis, but compensations are many in the enormous wealth of experimental research narrated, in the free criticism of methods old and new, and in the frequent reference to personal experience gained in many years of operative work. In the region of the appendix vermiformis, Senn promulgates a variety of the Monroe doctrine in claiming the present advanced state of the knowledge of diseases of the appendix and the neighbouring territory for the Americans; "the European surgeons are slow in accepting the teachings and practice as developed in this country." Senn's practice in appendicitis appears to us, however, to be in exact consonance with the European practice: that indiscriminate operation is to be condemned; that many cases recover and remain well by simple medical treatment; that the "surgery of the appendix is not sufficiently advanced to enable us to lay down fixed rules when and when not to operate."

The chapter on intestinal obstruction is well and fully written. It is illustrated by numerous experimental operations on dogs and cats, details of many of which are given. Regarding the use of Murphy's button and other such contrivances, the author says—"The time is not far distant when the suture will take the place of all mechanical devices." At first he used the buttons and plates extensively, but after a greater amount of practice he finds that the suture is more certain and less apt to be harmful. He now believes that suturing can be completed in twenty-five minutes, which previously, with less experience, required twice that length of time.

Lavage of the stomach in intestinal obstruction is lauded as a very important therapeutic measure. It is claimed for it that by its means intra-abdominal tension is diminished, that the distension of the bowel above the seat of obstruction is lessened, and that the vomiting and retching are practically abolished by evacuating the accumulated contents. The author does not tell us how such a mode of treatment is tolerated by patients, nor whether hiccough is diminished by it.

Senn notes, further, that only 30 per cent of all cases of intestinal obstruction operated on are accurately diagnosed before the operation, and admits somewhat sorrowfully that the weak side of intestinal surgery of to-day is the uncertainty of diagnosis.

The author has obtained very satisfactory results in tuber-

ular peritonitis in cases that resisted laparotomy and drainage, by repeatedappings and injections of 2 to 4 drachms of 10 per cent iodoform emulsion.

The chapter on anæsthesia is striking in this respect, that it is chloroform anæsthesia which is fully described; anæsthesia by ether taking second place. The impression on the reader is that Senn's preference is for chloroform generally, but that popular and professional opinion in America compel him to use ether. Amputations are meagrely dealt with. The chapter is noteworthy in containing the extraordinary opinion that "Syme's amputation through the ankle-joint, with excision of the malleoli, is an operation no longer entitled to consideration in a modern work on surgery, as amputation of the leg is now almost universally recommended for pathologic conditions and injuries warranting its performance" (p. 1094). Senn makes use of many amputations which have for long been in desuetude on this side, such as Pirogoff's, Chopart's, Gritti-Stokes'.

The book, on the whole, is a good one, but we should prefer to see it submitted to a considerable boiling-down process; it is much too prolix, too much like the conversation of the average American, and is a complete contrast in style and arrangement to the author's work on tumours, for example, which is a model of conciseness and method.

From the publisher's point of view, the book is excellently got up. We have been able to find only the most insignificant errors, as on page 322, Fig. 187 is inverted, and on page 658, "peritoneal" should be "pleural."

A Surgical Handbook. By FRANCIS M. CAIRD and CHARLES W. CATHCART. London: Charles Griffin & Co., Limited. 1902.

SINCE the *Surgical Handbook* first gave light (1889) it has been deservedly looked on with favour, not only by the undergraduate, but by the busy practitioner. Both classes desire a practical reference-book as a substitute for the larger volumes so indissolubly associated with the study of the healing art, and we can declare with whole-hearted sincerity that "CaIRD and Cathcart" fills the gap. That our opinion is shared by others is shown by the fact that the eleventh edition lies before us.

In this edition the authors have not only revised the body

of the work and made many useful additions thereto, but they have added new appendices of a thoroughly practical nature. A continuance of its popularity is certain.

The Ready Reference Handbook of Diseases of the Skin. By GEORGE THOMAS JACKSON, M.D. (Col.). With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. London: Henry Kimpton. 1902.

WE have pleasure in calling attention to the fourth edition of what strikes us as a particularly good handbook of skin diseases. Various new sections have been added, and yet the author claims credit for not increasing the size of the book—a praiseworthy achievement which has been attained by “careful pruning” of the old text. The present edition includes several new illustrations.

Contributions to Practical Medicine. By SIR JAMES SAWYER, Knt., M.D. Lond., F.R.C.P. Lond., F.R.S. Edin., F.S.A. Third Edition, revised and enlarged. Birmingham: Cornish Brothers. 1902.

THIS little treatise consists of a series of essays upon various subjects of practical importance to the medical practitioner, such as the causes and cure of insomnia, gastralgia, habitual constipation, chorea, asthma, &c. Much, or it might be said, almost all that is taught in this work has been for a considerable time part of the common knowledge of the profession, but as long as the teaching is sound, it cannot be too much impressed upon the reader, and the call for repeated editions of the book is a testimony to the favour with which the work, or the writer, or both, are regarded.

Acute Dilatation of the Stomach. By H. CAMPBELL THOMSON, M.D. Lond., M.R.C.P. London: Baillière, Tindall & Cox. 1902.

IN this small book of fifty-four pages will be found a remarkably lucid and succinct description of acute dilatation of the

stomach. Five cases which have come under the author's own notice are here recorded, and there are brief abstracts of forty-four cases which the author has collected. The work is much enhanced by five original illustrations. We note with both surprise and regret that, in these days of "modern gastric methods," there has been no attempt to chemically analyse the stomach-contents. Surely this line of investigation is a matter of importance in such cases? Apart from this sin of omission, the work is all that could be desired; and, containing as it does, a summary of the chief characteristics of this neglected, and perhaps not so very rare, condition, should prove exceedingly useful to physician and surgeon alike.

The Medical Treatment of Gall-Stones. By J. H. KEAY, M.A., M.D. London: Rebman, Limited. 1902.

NOWADAYS it is no longer heterodox but altogether *comme il faut* to enter protest against the enthusiasm of the surgeon. Many hard-won fields are being slowly but surely surrendered back to the physician, and this interesting little work owes its existence to the firm convictions of its author, that "the records of gall-bladder surgery, during the past ten years, have clearly shown that the results anticipated have not been realised, and that, unless in the most exceptional cases, the gall-bladder sufferer will derive more real and lasting benefit from hygienic and medical treatment than from operation." The whole subject of gall-stones is discussed with both knowledge and temperance. The great part played by septic processes, not only in the causation of all the morbid conditions associated with gall-stones, but also in the formation of the stones themselves, is strongly insisted on; and arguing from these accredited facts, supported by clinical experience, it is shown how, by providing an adequate supply of healthy bile to flush gall-bladder and ducts, more can be done for the patient than by incising and draining, or even removing his gall-bladder. There is no specific remedy for gall-stones, and there is no need to remove or—if we could—dissolve them. Operative treatment the author would limit to cases where the common duct has been completely obstructed by a stone for a few weeks, cases with adhesions around the gall-bladder and ducts, and cases of rupture, phlegmonous inflammation and gangrene of the gall-bladder. This little monograph is a distinct contribution to the treatment of gall-stones, and we can confidently recommend it to all interested in the subject.

Introduction to the Differential Diagnosis of the Separate Forms of Gall-stone Disease. By PROFESSOR HANS KEHR, Halberstad. Authorised Translation by WILLIAM WOTKYNs SEYMOUR, M.D., Harvard. London: Henry Kimpton. 1901.

THE first part of this book consists of four lectures. These deal with the pathology and pathological anatomy, the amnesia and examination, the special diagnosis, and the treatment of cholelithiasis. The author is very strongly of the opinion that operation is called for in *all* chronic cases, and he favours cholecystectomy in cases where there are adhesions between the gall-bladder and intestine or omentum. The second part deals with the histories of, and operations on, one hundred cases, the study of which "makes easier the learning of the special diagnosis of cholelithiasis." From his results he comes to the conclusion that "removal of stones from the easily accessible gall-bladder is *almost without danger*."

It is a pleasure to have the subject dealt with in a manner both masterly and masterful by a surgeon of such wide experience as Professor Kehr, and we feel sure that this volume will be welcomed by surgeons in this country.

As to the "translation" so-called, it is literal to a degree; it speedily ceases to be amusing, and leads one to suspect that the translator is possessed of a dictionary rather than of a knowledge of the idioms of the language he is translating. In many parts of the book the meaning can be gathered only by a reader having a tolerable acquaintance with German, and it is just possible that such a one would prefer to digest the work in its original form.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Myiasis: The Accidental Parasitism of Dipterous Larvæ in the Human Body.—A paper on this subject by Dr. D. M. Hutton was read at a meeting of the Liverpool Medical Society held on 7th November, 1901, and appeared in the *Liverpool Medico-Chirurgical Journal* for March, 1902. Dr. Hutton alludes at the outset to the meagreness of the references on this particular subject before the work of Cobbold was published in 1879.

His paper consists of two parts, one on intestinal myiasis, and the other on cutaneous myiasis. Cases are cited illustrative of both forms.

Intestinal myiasis: CASE 1.—A stout, healthy man, 54 years of age, while out golfing one day, drank some water from a spring. Next day he was seized with diarrhœa, which lasted for several days; the stools were liquid, and like pea soup in appearance; there were griping pains when the bowels moved. Three "worm" like creatures were passed; they were found to be the rat-tailed larvæ of the drone fly (*Eristalis tenax*).

CASE 2.—A child of 18 months was said to have vomited a "strange worm," and passed a similar one in the motions two or three days previous to being seen. They were alive in both cases. The baby had been sucking turnips and other vegetables. The larva was found to be that of *Agrotis segetum*, which feeds on vegetables of various kinds, including turnips, and hibernates on them.

CASE 3.—One published by Meschedé in 1866 in *Virchow's Archiv*. The patient was a boy of 7, whose symptoms appeared to Meschedé to point to either meningitis or one of the exanthemata. An emetic was ordered; it acted quickly, and a considerable number of maggots appeared among the contents of the stomach. They were about the size of the meat maggot. The head and other symptoms thereupon diminished. The boy had eaten some maggoty cheese. The larvæ probably belonged to the species *Piophilæ casei*—the cheese fly. Four points regarding the illness are of importance. (1) A stage of incubation lasting several days. (2) An invasion period. (3) A crisis following upon the administration of an emetic. (4) Rapid and uneventful convalescence.

CASE 4.—Related by Lublinski in 1885. A man, aged 46, who had previously enjoyed good health, began to complain of loss of appetite and discomfort in the stomach. He suffered repeatedly from attacks of syncope and vertigo. He had been in the habit of partaking freely of raw meat. While asleep one afternoon, he was suddenly seized with very severe pain in the stomach, and great thirst. He drank a cup of black coffee. Severe vomiting set in immediately, and he brought up a mass of living animals, rolled together like a ball of string, along with fragments of food. Subsequently, a few more minute animals were vomited up. They were found to belong to the species *Musca domestica*, and were fully developed larvæ. It was estimated that they were from eight to fourteen days old. They were about 1½ cm. long, and flies were bred from them.

CASE 5.—Recorded by Krause in the *Deutsche Medicinische Wochenschrift* for 1886. The patient was a tanner, 40 years of age, who had previously been healthy. He began to complain of general discomfort, loss of appetite, a feeling of anxiety and oppression, pain at the heart, and severe headache. While at his work one day he suddenly cried out loudly, and fell to the ground, striking his head. Epilepsy was diagnosed, and the patient treated accordingly. A mass of living animals, belonging to two species, was passed by the bowel. They were sent to Professor Leuckart, who recognised the larger as *Musca vomitoria*, and the smaller as *Anthomya canicularis*. Krause estimated that about 1,000 of the former were passed. The various symptoms began to disappear as soon as they were got rid of, and he had no further seizures.

In reference to the etiology, Dr. Hutton indicates the resisting powers of some of these maggots. The larvæ of the drone fly have lived for forty minutes in alcohol at 90° C., and the maggots of the blow fly will survive three or four hours' immersion in tincture of iodine, or a saturated aqueous solution of thymol, or a solution of 1 in 1,000 perchloride. The digestive juices for the most part destroy them. Cases occur in which they are discharged from the bowel periodically, at intervals of weeks or months, as if they bred in the intestine. One such case is reported by Dr. Baker in the *Indian Medical Gazette* for 1892, in which many hundreds are said to have been passed at regular intervals of six to eight weeks, over a period of ten months; they continued to come at time of writing. They were traced to the

eating of infected Bael fruit. Dr. Hutton remarks that we must have very strong evidence before we can believe that the chronic discharge of maggots may be caused by the larvæ continuing to breed in the bowel.

In an article on the same subject, which appeared in the *Wiener klin. Wochenschr.*, 1st February, 1902, by Dr. H. Schlesing and Professor A. Weichselbaum, those observers state that the more rare form of the affection, viz., myiasis chronica intestinalis, can apparently be reckoned as a distinct disease, and may represent different processes. It may appear as an enteritis pseudomembranacea, or it may assume a dysenteric or a follicular form. It is to be regarded as a severe affection on account of the constitutional disturbance, which is frequently not inconsiderable, and the possibility of extensive ulceration followed by constriction of the bowel. In all forms of dysentery in which the cause is obscure, myiasis intestinalis is to be thought of. When the result of the examination of the stool on one occasion is negative, or when other intestinal parasites are found, e.g., anchylostoma or ascaris, this does not necessarily exclude myiasis. The dipterous larvæ are most frequently vomited in young subjects. The chrysalis is much less frequently observed. They state that breeding of the larvæ in the human intestinal canal would appear to be possible, but that in what particular way this may take place we know not, having as yet no data to go upon.—(*Deutsche Medizinische Zeitung*, 27th March, 1902.)

Cutaneous myiasis.—Dr. Hutton deals shortly with this portion of the subject, inasmuch as it is better known. The larvæ which penetrate the skin and give rise to subcutaneous abscesses are derived from the "bot fly" or "warble fly" of cattle and deer, or from species allied to these. Various forms of cutaneous myiasis are distinguished, *M. vulnerum*, *narium*, *conjunctivæ*, &c., according to the mode of occurrence, or the part affected. A striking case of myiasis *narium*, due to the maggots of the common flesh fly or grey bottle, *sarcophaga carnaria*, is described by Summa (*St. Louis Medical and Surgical Journal*, 1889). The patient was a well-built man, aged 34; he complained of very severe headache, insomnia, anorexia, and constipation. His nose and the surrounding parts, especially on the left side, were swollen and had an erysipelatous appearance. He was scarcely able to see with his left eye. The nasal mucous membrane was so much swollen that rhinoscopy was impossible. There was a particularly offensive smell. On examining the patient's mouth, an ovoid hole, situated partly in the soft and partly in the hard palate, was seen. It was rather more than an inch long, and about a quarter of an inch broad; its border was of a dark-bluish colour. Numberless maggots could be observed in the hole. There was a sero-sanguinolent discharge from the opening. The smell was so offensive that it caused Summa to vomit five times before he was able to begin to treat the patient. It seems that on one occasion, when fishing and hunting in Illinois, the patient passed a few nights out of doors. The infection probably took place at this time.

[See further, *Glasgow Medical Journal*, 1898, vol. xlix, pp. 273-5.—ED.]

Case of Tetany in an Adult.—In the *Boston Medical and Surgical Journal*, 8th May, 1902, Dr. Edwin A. Locke describes a case diagnosed as tetany, in a man of 36 years of age. The patient was a blacksmith whose employment consisted in forging heavy chain; his work was therefore very hard, and he was likewise exposed to great changes of temperature. He took alcohol to some extent. With the exception of gonorrhœa and doubtful syphilis eighteen years before, he had been a healthy man. He first noticed occasional cramps in the muscles of the hands and fore-arms seven years ago. They were accompanied by sensations of tingling and numbness; there was no headache, nausea, or vomiting. One day he suddenly became much worse; while holding the hammer, his hands could only with great difficulty be released, and when they were opened, on the force being withdrawn, the fingers immediately assumed the former position, the hand becoming tightly clenched. The cramps passed to the muscles of the loins, and then to those of the feet and legs. Later in the same day, the spasms suddenly became so

severe as to cause him to roll on the floor in agony in a kind of stupor. The affected muscles were intensely hard and slightly tender, various sets being affected at the same time or successively, and the whole seizure lasting from a few seconds to ten minutes. The face was cyanotic, and the pulse accelerated. There was no vomiting. Polyuria was present. Hot fomentations, together with massage, quickly gave relief. Three years later he had a second attack, which came on suddenly and resembled the first, although it was of shorter duration; and, three months ago, a third attack occurred. It was of the same character, but much more severe than the two previous ones. At the outset, he vomited and voided urine. It was preceded by numbness and cramps in the muscles.

At the commencement of one of those attacks the head was drawn slightly to the left side, the fingers were strongly adducted, the wrists flexed and slightly rotated internally, and the arms adducted and held firmly across the chest. The thighs, legs, and feet were somewhat flexed, and the toes partially extended and abducted. The contraction of the muscles was usually symmetrical, and there was no fibrillary twitching. The plantar reflexes were normal; ankle clonus was not present. Trousseau's sign (the characteristic spasms induced by pressure upon the large nerve trunks) was present to a marked degree. The electrical irritability of the nerves was not determined. The urine obtained at this time was found to contain a trace of albumen. The chlorides were considerably diminished. A few hyaline and fine granular casts with occasional cells adherent were found on microscopic examination.

In 1894, Griffith was able to collect but 72 cases in America. Afterwards, Frankl-Hochwart brought together 399 cases of all ages in Germany; of these, 83 per cent were between the ages of 16 and 25. Of the 142 cases studied by Gowers in 1898, only 13 occurred in males above the thirtieth year, and only 4 between the thirtieth and fortieth. In general, the disease is shown to be slightly more common in males. It is also more frequent in the first and second decades of life, and is very rare after the fortieth year.

Regarding the question of etiology in this case, it is to be noted that several of the factors included among the more immediate causes of the affection were present, namely, prolonged and hard muscular exertion, exposure to cold, and alcoholism. There were, however, none of the commonly recognised causes, such as gastro-intestinal disturbances, removal of the thyroid, acute fevers, toxic conditions, and epilepsy.

The author based his diagnosis on the position of the arms, the muscular spasms being typical, the onset in the muscles of the extremities, the involvement of certain groups only, the bilateral and intermittent character of the spasms, and the presence of Trousseau's sign.

He concludes by drawing attention to two points of special interest in this case, viz., the presence of polyuria and albuminuria during the attack, few cases of either condition being recorded. They are much more frequently found in children than in adults. Hoffmann, Neusser, Mader, and Frankl-Hochwart each mention one case of polyuria. Among seventy-two cases in children examined by Loos, only two showed albuminuria in the urine. Frankl-Hochwart and Hoffmann have each reported one case.

The Diazo-reaction and Tuberculosis.—Dr. van Beneden, in an article in the *Annales de la Soc. Méd.-chirurg. de Liège*, 1901, S. 467 ff., deals with the relation subsisting between the diazo-reaction and tuberculosis. He mentions that Ehrlich has drawn attention to the presence of this reaction in chest affections being an ominous sign; also that Michaelis even goes the length of recommending that all tubercular patients who show this reaction should be placed in a sanatorium, and of saying that, as a rule, those patients die before the expiry of six months. Of 111 tuberculous patients who showed Ehrlich's reaction, 80 died. Of the 31 who survived, 15 only recovered; the remaining 16 were either admitted to another hospital or returned to their homes, their condition being unaltered. The reaction may disappear for a short time, as when the patient is gaining weight; this does not last long,

however, and the patient's strength rapidly becomes diminished. Michaelis has found bacilli in the blood of patients showing the diazo-reaction; this is opposed to the conclusions of most authors. The reaction is independent of the pyrexia, and may disappear before death. In tubercular disease of the lungs its diagnostic value is small, whereas it may be of importance in cases of pleurisy, pericarditis, peritonitis, and meningitis in enabling us to say whether they are of a tubercular nature. Also, when the phthisis is latent and simulates some other diseases, it may be of diagnostic value. In influenza the diazo reaction is exceptional. However, should the general condition of the patient after influenza remain low, and convalescence be prolonged, the Ehrlich reaction, if it continues to be present for a few weeks, is suggestive either of commencing tuberculosis or the relighting of an old tubercular process. As has been remarked, the occurrence of the reaction in phthisical patients is of unfavourable significance as regards the prognosis, still there are exceptions; cases occur in which the patients, contrary to expectation, improve, and live for a considerable time.—(Loeb, *Deutsche Medizinisch-Zeitung*, No. 29, 10th April, 1902.)

The Diagnosis of the Acute Exanthemata by the Examination of the Leucocytes.—In a paper by J. Courmont in the *v. Leyden-Festschrift*, I, 103, the writer gives the results of his collective researches on the above-named subject, of which an epitome may be given.

In small-pox there is always a leucocytosis; it sets in before the rash appears, and is quite manifest before the vesicular stage; it reaches its maximum at the beginning of pustulation, after which it declines, provided no complication occurs. The leucocytosis has, however, this peculiarity, that, in contradistinction to most forms observed, the increase is to be ascribed not exclusively to the polynuclear neutrophile variety, but includes mononuclear forms, and amongst them a number of myelocytes. The polynuclear leucocytes, which normally constitute about 66 per cent of the total number, fall in this disease to 50 per cent. Besides, red blood corpuscles containing nuclei are found. Microscopic examination of the vesicles reveals an absence of cell elements at first, then a gradual influx of neutrophile and oxyphile leucocytes, also of myelocytes. At the commencement of pustulation the exudation elements are characteristic of the disease, consisting of mononuclears and myelocytes, while the pus of abscesses is composed of polynuclears. At one place there is evidence of a mixed infection; at another, of suppuration produced by the small-pox virus.

The writer believes it possible to diagnose the disease from an examination of the dried preparation without seeing the patient. No change from the normal was found in the condition of the blood after vaccination.

In measles, a moderate leucocytosis, through increase of the polynuclear neutrophile leucocytes and a decrease in the eosinophiles, was found; never myelocytes or nucleated red corpuscles.

Scarlet fever—a condition similar to that found in measles—the leucocytosis was, however, more pronounced, and an increase of eosinophiles, which was, however, doubtful.—(A. Loeb, *Deutsche Medizinisch-Zeitung*, 26th June, 1902.)

A Case of Unilateral Progressive Facial Atrophy.—A case of the above-named affection, differing in several respects from the classical type, is reported by Dr. J. W. Courtney in the *Boston Medical and Surgical Journal*, 1st May, 1902.

The patient is a man, aged 20, unmarried, and a clerk by occupation. He is a native of Poland, and has been fourteen years in America. He was first seen at the clinic for nervous diseases on 6th September, 1901. The family history, so far as it was obtained, was good in respect of nervous and mental diseases. He had measles at 5 years of age, and has had no acute illness since. There was no evidence of venereal disease. He consumed beer and tobacco in moderation.

Twelve years previously he first noticed that the right side of his face was

not as full as the left. He thought the right side normal and the left side swollen. The atrophy has continued up till now.

The patient's general health is good. There is little of note in the examination of the face apart from the unilateral atrophy. The facial and masticatory muscles are but slightly affected. The skin is normal in colour, and the faradic excitability of the various muscles is normal. Sensation is likewise normal, as also the fundus oculi. The lower jaw projects somewhat, and does not appear to be as convex on the right as on the left side. The scalp and hair are alike on the two sides. The ears are symmetrical, and the muscles of the right shoulder are unaffected.

Faradism was employed fairly constantly for a period of about five months, but without apparent benefit.

The author states that the most satisfactory of the various theories put forward in explanation of this disease is that which assumes a neuritic process, brought about by some accidental factor (trauma, infection, &c.) in a congenitally defective fifth nerve.

MATERIA MEDICA AND THERAPEUTICS.

By JOHN M. COWAN, B.A., M.B. CANTAB.

Surgical Treatment of Ascites due to Cirrhosis of the Liver. (Harris, *Jour. Amer. Med. Assoc.*, 1902, vol. i, p. 1137).—The author has collected a series of cases from the literature, and has himself operated upon two cases. In this series 23 were cases of alcoholic cirrhosis with atrophy. Of these, 7 patients (30 per cent) died within fourteen days of the operation, 5 more (52 per cent) within two months, and 1 more (56 per cent) within six months.

The ascites had not returned in two cases two years after the operation, in one case one year after the operation, and in another case the duration of which is not stated. In the other cases which survived, the ascites had recurred, and this was also the case in practically all of the patients who died after a few months.

"When we consider the clinical results that have followed the Talma operation, it cannot be said that they have thus far been very flattering. . . . In considering the reasons for this, it is necessary to turn to the cause of the ascites. As stated in the preceding remarks, the Talma operation is based on the theory that the ascites is due to an increased tension in the portal circulation, and is, therefore, a pure pressure transudation. The author is of the opinion that this view is not correct, and for the following reasons—(1) Atrophic cirrhosis may proceed to a fatal termination without the appearance of ascites; (2) increased tension may exist in the portal system, as made manifest by gastric and intestinal hæmorrhage, without the development of ascites; (3) in many cases of cirrhosis, œdema of the legs and feet may precede the appearance of ascites by several weeks or even months, and in the absence of any apparent kidney disease. One of the most important reasons, however, according to the author's opinion, is the fact that in these cases of cirrhosis a chronic inflammation of the peritoneum occurs, which must contribute materially to the development of ascites, both by increasing the amount of fluid furnished by the peritoneum, and by decreasing the rate of absorption." His conclusions are—

"While the increased tension in the portal system is an important factor, it is not the only one concerned in the production of ascites.

"Talma's operation in itself is quite simple and practically devoid of danger, as the deaths have been due to complications or to the advanced stage of the disease. As the chronic inflammatory changes in the peritoneum are materially instrumental in maintaining the ascites, the operation should be performed early, in a pre-ascitic stage if possible, in order that the reduction of tension

in the portal system may delay the appearance of these changes and, secondarily, the ascites, as long as possible.

"In a few cases the ascites has apparently been favourably influenced by the operation, but such has not been the rule nor does it appear that the operation has in any way modified the usual course of the disease."

Murrell (*Lancet*, 1902, vol. i, p. 1602) narrates a case of his own and gives further references on this subject.

The Treatment of Chorea. (Comby, *Bull. de la Soc. Méd. des Hôp.*, 1902, p. 508).—The paper is based on 240 cases of chorea which the author has treated during the last eight years.

He divides these into two groups—(1) mild cases, (2) serious cases, the latter numbering 150. In the former he keeps the patient in bed on a milk or vegetarian diet, and adopts hydrotherapeutic measures, cold affusion or warm or tepid baths, either simple, alkaline, or sulphur; his favourite method, however, is the wet sheet, in which the patient, while fasting, is enveloped for half to one hour every morning; in severe cases this may be repeated two or three times during the day; there is no contraindication to its use. In the severe cases he has tried many drugs, but believes only in antipyrin and arsenic. Antipyrin he gives in full doses, commencing (for a child of 10 years) with a dose of 2 grammes in the twenty-four hours, and increasing it by 1 gramme per day until he reaches his maximum (50 centigrammes per day for every year of age), in this case 5 grammes, which he continues for five or six days and then decreases the dose gradually, the administration being continued over a period of eleven to twelve days, during which the patient has taken 43 to 48 grammes of the drug.

The inconveniences of this treatment are oliguria, which may go on to a temporary suppression; hæmoglobinuria, which occasionally occurs; vomiting, and erythema. These results are, however, generally avoided by a copious supply of fluids. This treatment is contraindicated in cases where the kidneys are not intact, and in hot weather when the urinary secretion may be somewhat scanty on account of increased perspiration; if, however, the patient is willing to drink freely, this is immaterial. He always gives 1 gramme as a dose. Cure usually is complete within a fortnight; if not, or if the case is very serious at the onset, he resorts to arsenic.

He objects to Fowler's solution as being too concentrated, and uses "liqueur de Boudin," a watery solution of arsenious acid containing 1 milligramme of the acid in 1 gramme.

For a child of 8 years he commences the treatment by giving 10 grammes of Boudin's solution mixed with 120 grammes of julep in the day, a tablespoonful being taken every two hours, and followed by a drink of milk. Each day the dose is increased by 5 grammes of Boudin's solution, until the maximum dose of 30 grammes per day is reached, after which it is similarly reduced. In nine days, consequently, 170 grammes of Boudin's solution have been taken, or 170 milligrammes of arsenious acid (2.6 grains arsenious acid = 286 minims of Fowler's solution).

To a patient under 8 years of age he gives 125 grammes of Boudin's solution in the nine days, starting with a dose of 5 grammes; for a child under 6 the total dose is 85 grammes. These doses are full, sometimes toxic in their effect, vomiting and fever occasionally resulting, but unless these are severe the treatment need only be interrupted for twenty-four or forty-eight hours. He has had one case of arsenical palsy; this patient (æ. 7) took 235 milligrammes of arsenious acid in eleven days; recovery followed.

He believes that it is necessary to poison the patient to a certain degree, and considers that a short course of large doses of arsenic is less liable to be followed by arsenical palsy than a prolonged course of smaller doses.

He does not consider cacodylate of soda or arseniate of soda to be as useful as arsenious acid.

Of these 240 cases, 2 died, both of whom suffered from ulcerative endocarditis.

DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B., C.M., F.R.S.E.

Abscess of the Maxillary Antrum in Children.—Doubt has occasionally been thrown upon the diagnosis of empyema of this cavity in infants. It is interesting, therefore, to note a case recorded by Dr. Stewart Shirlow (*Journal of Laryngology*, June, 1902). The patient, an infant, aged 9 months, suffered from an inflamed swelling on the left cheek of two or three days' duration. There was a free discharge of pus from the nostril of the same side, and a fistulous opening in the alveolar part of the upper jaw. On passing a probe, bare bone and a movable body was detected; and under an anæsthetic the cavity was opened, when a perfect crown of a molar tooth was discovered. Daily irrigations of a few weeks proved sufficient to obtain a complete recovery.

Pedunculated Angioma of the Larynx.—Dr. Bronner showed a patient at the Laryngological Society of London in April this year (see *Transactions*), aged 63, who suffered from slight hoarseness for twenty years. On examination, a large red raspberry-shaped growth, about the size of a marble, was seen on the glottis. The tumour was removed successfully, and proved to be an angioma.

Laryngeal Tuberculosis.—Mr. Richard Lake delivered a lecture at the London Post-Graduate College this year, and those interested in the subject will find the question of the treatment fairly and frankly discussed. Amongst the fluid remedies recommended in the form of pigments or paints, he places reliance upon lactic acid or formalin. Amongst powders which have been useful he recommends iodoform, chinosol, paraform, and orthoform. For tuberculous trouble below the chords intra-tracheal injections are recommended. The important question of surgical treatment of the larynx is fully discussed, and he gives the indications and contra-indications for operations. In his list of cases he states that 48 out of 329 cases were successful; and Mr. Lake is of opinion that cases of laryngeal phthisis, whether late or early, should never be considered so grave as to warrant them being left alone. Relief at least in most cases can be given.

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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 19TH JULY, 1902.**

	WEEK ENDING			
	June 23.	July 5.	July 12.	July 19.
Mean temperature, . . .	63·3°	60·2°	57·6°	58·6°
Mean range of temperature between day and night, .	11·7°	16·7°	12·6°	12·5°
Number of days on which rain fell,	2	5	4	1
Amount of rainfall, . ins.	0·20	0·95	0·61	0·27
Deaths registered, . . .	276	265	241	205
Death-rates,	18·5	17·8	16·2	13·7
Zymotic death-rates, . .	1·2	2·1	1·3	1·1
Pulmonary death-rates, .	5·8	4·7	4·8	3·5
DEATHS—				
Under 1 year,	56	55	52	39
60 years and upwards, .	65	49	45	48
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	3	3	4	4
Scarlet fever,	4	4	1	...
Diphtheria, . . . . .	...	2	1	...
Whooping-cough, . . .	3	10	3	7
Fever,	1	...	3	...
Diarrhœa,	7	13	8	6
Croup and laryngitis, .	1	1	...	...
Bronchitis, pneumonia, and pleurisy,	54	46	38	28
CASES REPORTED—				
Small-pox, . . . . .	...	2	...	...
Diphtheria and membranous croup,	9	15	18	3
Erysipelas,	37	26	21	8
Scarlet fever,	46	33	27	27
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	10	5	6	3
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	5	...	...	1
Measles,*	66	56	34	37

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

No. III. SEPTEMBER, 1902.

ORIGINAL ARTICLES.

THE NEW ELECTRICAL PAVILION OF THE GLASGOW
ROYAL INFIRMARY.

By JOHN MACINTYRE, M.B., C.M., F.R.S.E.,
Consulting Medical Electrician to the Hospital.

IN the year 1887 an electrical department was instituted by the managers of the Royal Infirmary, and probably for the first time in hospital practice arrangements were made for applying currents in the central room or wards by means of wires carried through the building.

Eight years ago, owing to the kindness and generosity of one or two friends interested in the hospital, a considerable addition was made to the apparatus, consisting of gas engine, secondary cells, medical and surgical switchboards, and electrical apparatus generally for use in the treatment of disease.

Five years ago, within three months of Roentgen's discovery, an *x-ray* laboratory was fitted up, thoroughly equipped with everything that was then thought necessary for the work.

During these years the apparatus has been very largely used by the staff, both visiting and dispensary, and the outdoor department has increased year by year, so that the accommodation was found quite inadequate for the requirements. This will be better understood from the fact that in

the *x-ray* department alone over three thousand *x-ray* photographs have been taken in four years, in addition to the very frequent use of the fluorescent screen. Last year over fourteen hundred *x-ray* photographs were taken for the staff.

Towards the end of last year the activity everywhere displayed in therapeutic work made it apparent that new arrangements for *x-ray* work, Finsen's light treatment, ultra-violet rays, static electricity, and other forms of radio-active rays, would be required. It was further evident that we had not sufficient accommodation in the hospital for the fitting up



FIG. 1

Interior of electrical pavilion.

of such an extensive installation, and so the managers agreed to erect a new electrical pavilion, which has now been completed. To a few generous friends we are indebted for defraying the very considerable expense which has been incurred in building and equipment.

The new building itself is situated alongside the corridor which joins the east and south blocks of the present building. It lies north and south, and consists of four large rooms, the first being devoted to the transformers and Finsen's treatment; the second contains the static machine, with its motor and

high-frequency apparatus; the third is to be used for the apparatus necessary for constant and interrupting currents for medical and surgical purposes, such as cauteries, drills, instruments for illuminating cavities of the body, magnets, with all the necessary accessories; in the fourth, all the *x-ray* apparatus for photographic, screen, and therapeutic work is arranged with the necessary dark room accommodation. Where it is necessary, arrangements have also been made for completely excluding or modifying the light.



FIG. 2.

Room for transformers, and light treatment.

INSTALLATION.

This may be divided into three distinct installations. Firstly, the rooms themselves are lighted by the 250 volt circuit from the Corporation; secondly, a transformer has been built by Messrs. Mavor & Coulson to give 55 volts and 50 amperes from the Corporation supply; thirdly, there is the old gas engine, with dynamo and secondary cells, giving 56 volts and 30 amperes. The last two are intended for all medical and surgical purposes, whether for diagnostic or therapeutic use, and by means of turn-over switches either can be used, so

that, in the event of a breakdown with the Corporation supply through the transformer, the gas engine and cells can be utilised, or *vice versa*.

While patients may be attended to in the electrical department itself, the hospital theatres and wards have been wired, so that the instruments can be used at the bedside or at the operating table. The necessary fuses for the complex series of instruments have been provided in sections, so that in the event of one fuse giving way, the other parts of the house are not cut out. Different plugs have been arranged in the wall,



FIG. 3.

Room for general medical and surgical appliances.

of the most recent pattern, to give good contact, and are so arranged that an instrument for the 250 volt circuit cannot be switched on to the 50.

A main switchboard has been fitted up on the Corporation side of the transformer which controls the whole supply to the department. This is provided with the necessary starting switches. On the other side of the transformer is a large distributing board with six switches going to different rooms, so as to send the energy where it is required.

The transformer was specially built for medical work, and

the voltage was selected because the first apparatus in the house was worked from a similar supply, hence the old, as well as the new, instruments can be used. It is, moreover, safe to work with such a voltage.

APPARATUS.

For medical and surgical purposes, where the constant or interrupted current is required when testing muscles and nerves and also for therapeutic purposes, special apparatus for utilising the currents from the transformers has been obtained. In the electrical pavilion a stationary apparatus has been fitted up for giving galvanic and faradic currents. It contains switches, fuses, volt regulator, current reverser, volt meter, and milliampere meter, with a large number of electrodes and other accessories. For convenience in the wards where the physicians and surgeons wish to test the condition of the nerves and muscles themselves, similar but portable cases have been provided, and these can be applied at the bedside by means of plugs and flexible wires.

Specially devised boards have been constructed for using the cautery or electric lamps. These are portable, and can be employed in the theatres and other places, as well as in the electric pavilion. Suitable handles for platinum points and snares have also been provided. These boards may also be employed for illuminating the lamps of different pieces of apparatus used in examining the cavities of the body. These include the various forms of instruments for direct examination of the eye, ear, nose, accessory cavities (including the antrum), respiratory passages, cesophagus, urethra, bladder, and ureters.

SURGICAL DRILLS AND MOTORS.

Two motors will be found of different strengths, and are meant to be used for trephines, drills, circular and other saws. These are controlled by means of rheostats, and arrangements have been made for immediately stopping the current or reversing it, as may be required during the operation.

ELECTRO-MAGNET.

A very powerful electro-magnet has been designed to be employed in the extraction of metallic foreign bodies. Different points may be attached to this instrument, suitable for various parts of the body and different cavities. It is extremely

powerful, is capable of suspending several hundredweights, and is built upon similar lines to Hab's huge electro-magnet.

This instrument consists of a special metal stand, 6 feet high, with a cross bar at the top. This can be turned round the central portion easily by means of ball bearings, and at each end is a wheel, in the groove of which a strong iron rope passes. To one end of this the magnet is suspended, and to the other is attached a counterpoise. Further, the magnet is held in its position by a horse-shoe metal bar, permitting of movement in any direction.



FIG. 4.

Electro-magnet.

By this means, at the bedside the magnet can be applied to and passed over any part of the body, as the free movement and exact counterbalance of weights enables one to pass it over the surface of the trachea with perfect ease. The magnet itself consists of a large bar electro-magnet, with charcoal iron core 20 inches long and 4 inches in diameter. It has six thousand turns of twenty S. W. G. copper wire on metal bobbins carefully insulated with mica. It is excited by connecting it to the 250 volt main. Across the turns of the magnet a 32 candle power lamp is placed, so as to save risk to insulation from self-induction when breaking the current.

BULLET FINDERS.

Electric probes for the detection of bullets have been supplied.

STATIC ELECTRICITY.

For medical purposes, and also for the treatment of lupus and other chronic affections, a very large and powerful static machine has been built specially for the hospital by Lord Blythswood in his laboratory at Renfrew.



FIG 5.

Wimshurst machine.

The machine is of the Wimshurst type, and has 40 plates of 36 inches diameter. It is driven by a 1 horse power electro-motor, and has a special fan motor with ventilating shafts and apparatus for driving out any gases which form within the case when the machine is in action. Suitable insulating stools, and tables with discharge rods and spark-gap apparatus, form part of the installation, and there is also a number of electrodes for giving the current to different parts of the body.

HIGH-FREQUENCY CURRENTS.

The pattern employed of D'Arsonval's apparatus is that constructed by Dean, of London. A specially designed switch-board has been fitted up, so that different interrupters—such as the mercury or Mackenzie Davidson—can be employed as desired. On the switchboard, all the arrangements for measuring high-frequency currents, reversers, rheostats for the motors, are provided. A large number of electrodes,



FIG 6.

High-frequency apparatus.

including Oudin's resonator, brushes, vacuum tubes, &c., for use in nervous and muscular affections, as well as in the treatment of lupus and rodent ulcer, are included in the equipment. The current is applied to the patients while resting on a specially devised couch.

X-RAYS.

Three large coils, capable of giving 14 to 12 inches spark respectively, have been added to the installation. All the

well-known forms of interrupters have been fitted up, including the mercury, Mackenzie Davidson, and Wehnelt. A



FIG. 7.

X-RAY DEPARTMENT.

Showing arrangement for taking photographs from above, special switchboard, and dark rooms.

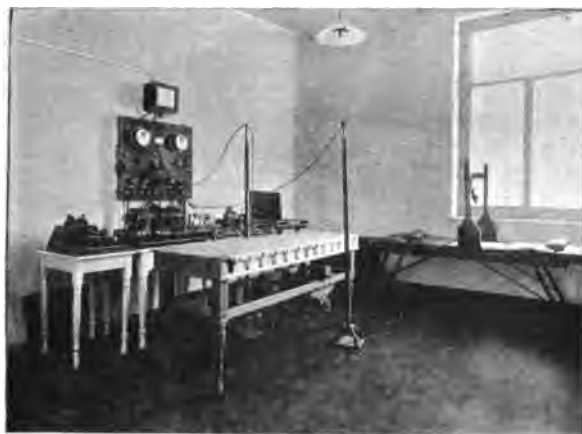


FIG. 8

X-RAY DEPARTMENT.

Showing arrangement for taking photographs from below, and also for illumination of screen above patient when operating.

pecially designed switchboard has been attached to the wall, with rheostats for motors, volt and ampere meters. There is also a special set of switches, so that any one of the interrupters with suitable condensers can instantly be employed as required for different purposes. Stands and vacuum tubes (Queen's, Dean's and Cox's record designs) have been provided, as well as fluorescent screens, and all the most recent accessories for therapeutic as well as photographic purposes. Two couches have been provided for taking photographs from above or from below. There is also a localiser of the most recent design for detecting the situation of foreign bodies. All the apparatus necessary for the taking and demonstration of stereoscopic photographs has been added to the department.

LIGHT TREATMENT.

Finsen's lamps, modified by Lortet and Gounod for the treatment of lupus and other affections, are the forms included in the new apparatus. Three sets of these, with suitable arc lights, quartz lenses, and water coolers, have been provided, each lamp being controlled by a separate switchboard with rheostat and ampere meters. Couches, chairs with head rests, and all the necessary apparatus have been fitted up with the other accessories.

Of late, experiments have been made by Professor Goerl, Walsham, and others. It is claimed for their method of treatment that they produce more rapid effects than Finsen's apparatus, being very rich in the violet and ultra rays. Walsham's apparatus for use with the ordinary induction coil has been provided with rock crystal, and the necessary means for cutting ice blocks for compressing the tissues.

During the past year a very portable and useful instrument for the production of violet and ultra-violet rays has been brought out under the name of the "dermo" lamp. In this particular apparatus iron is used instead of the ordinary carbon points for the arc light. Dr. Bang, of Copenhagen, was amongst the first to show the great bactericidal action of this lamp as compared with others. A complete set of this apparatus has also been fitted up.

That the new building and apparatus were required is shown by the fact that already the staff has had to be increased, and, even now, it takes the whole accommodation to get through the large number of cases attending for all kinds of medical and surgical work.



FIG. 1.

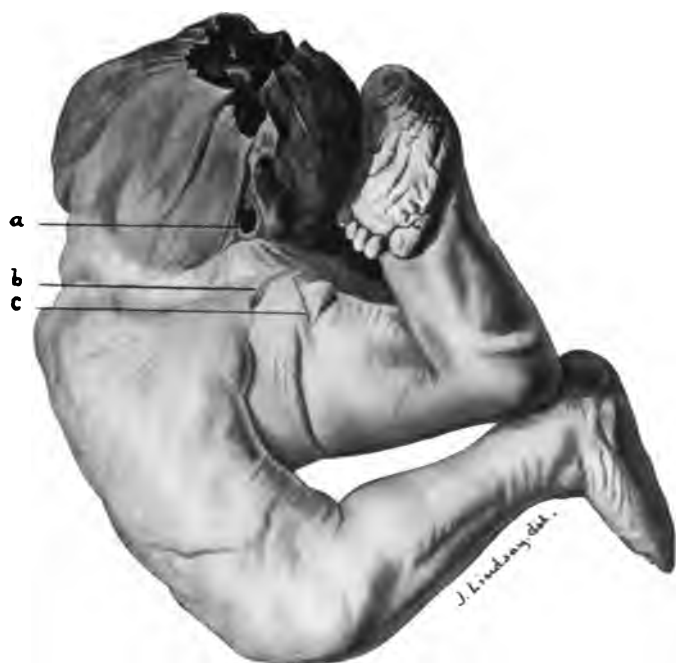


FIG. 2.

FRONT ASPECT OF THE LOWER HALF OF THE BODY.

a—Unnatural anus (urachal opening); *b*—Proctodæum; *c*—Left labium majus (?).

GASTROSCHISIS IN A TWIN.¹

By JOHN LINDSAY, M.A., M.D.

THE case occurred in the practice of Dr. John Ritchie, and Dr. Jas. H. Nicoll having received the specimen from Dr. Ritchie, and preserved it, kindly allowed me to dissect it and publish a report. The specimen as received consisted of the foetus with the placenta still attached (Fig. 1).

The placenta was that of a twin pregnancy from a single ovum, there being only one chorion, with two amnionic sacs. It was slightly oval in form, and about the average size of the organ in single births. Its foetal surface was divided into two portions, respectively equal to one-fifth and four-fifths of the whole, the division being effected by the line of reflection of the two amnions, which ran obliquely across the surface and had the umbilical cord of the absent twin inserted near one end. The smaller part, belonging to the malformed twin, was deeply stained with meconium, and was crumpled into a short cone, either on account of the peculiar attachment of the foetus, or because it had occupied one of the upper angles of the uterine cavity. The amnion overlying it was gathered together at the edge of the placenta, and then became expanded into the covering of the hernia on the abdomen of the child. There was thus no proper funis, but the umbilical vessels, consisting of a single artery and the vein, ran in the wall of the hernial sac. The cord of the surviving child had the usual pair of arteries and the vein. No communication between the two sets of vessels could be found by dissection, yet, as in other single-ovum twins, there was probably some capillary anastomosis in the substance of the organ, as section across the place of union revealed no line of demarcation between the parts beyond the ordinary division into lobules.

The foetus.—A practically complete dissection of the body was made, a portion of the spinal cord alone being omitted from the examination. Only those parts, however, which were abnormal are referred to below; when a particular structure is not mentioned it is to be understood that it was regularly constituted or modified only by distortion.

External appearance and skeleton.—It is most convenient to take these together. In size, the foetus looked like one of seven months. The head and upper limbs were well formed:

¹ Read at a meeting of the Glasgow Obstetrical and Gynaecological Society held on 28th May, 1902.

so also were the lower limbs, except that the dorsum of the left foot lay upon the front of the leg, the extensor tendons being shortened, and the anterior annular ligament of the ankle-joint lifted up and lengthened. The spine was distorted in the following manner. When the mesial plane of the skull and cervical vertebræ was placed perpendicular to the plane of the horizon, the dorsal region of the spine was seen to curve, at first slightly to the right, then very sharply to the left, so that the axis of the lumbar and sacral vertebræ ran at right angles to the middle plane, and the tip of the coccyx stood farther outwards than the left parietal eminence. At the same time the lumbar and sacral regions were thrown far forwards by an antero-posterior curvature, and the dorsal laminae of the sacrum were unossified, permitting the escape of a meningocele. The symphysis pubis was open to the extent of an inch, but the gap was bridged across by a ligament which formed part of the abdominal parietes. The iliac bones were bent backwards, the fossæ converted into slight convexities, and the bones otherwise so deformed that the femora lay along the back of the fœtus.

A hemispherical protrusion occupied the whole front of the abdomen from the epigastric region to the pelvis. It was covered by a thin, dark, and smooth membrane in direct continuity with the normal skin. On its antero-inferior surface, where skin and membrane joined, there was an oval foramen, three-eighths of an inch in length, from which meconium escaped (Fig. 2*a*). This foramen had clearly defined and rounded edges. In the left inguinal region there was an elevation of the skin, filled with and lying over a thick deposit of subcutaneous fat (Fig. 2*c*). Presumably, this was the left labium majus, but no evidence was obtained by dissection or microscopic examination to prove that it was so. At the bottom of a deep furrow, between the thighs in front, there was the entrance to a canal, which meantime may be called the meatus urinarius (Fig. 2*b*). No other part of the external genitals was present, and no trace was discovered of the anus or of any of the perineal muscles. The pudic arteries and nerves could not be found, but it is not certain that they were absent.

The abdominal parietes.—On the right side the external oblique muscle consisted only of the fibres which arise from the four lowest ribs; and these were inserted along the crest of the ilium, into Poupart's ligament, and by a thick tendon into the body of the os pubis. The muscle was limited internally by a well-defined and thickened border curved to

the neck of the hernial protrusion, the greater part of its aponeurosis being absent. On the other hand, the aponeuroses of the internal oblique and transversalis muscles were present, and while forming a conjoined tendon for insertion into the os pubis they, for the most part, blended with the wall of the hernia. There was no trace of the rectus on the right side, but on the left it was a stout, fleshy bundle. The broad muscles on the left were much degenerated, but maintained their proper relations to one another and to the adjacent bones. The aponeurosis of the external oblique and that of the transversalis joined together along the inner border of the rectus, and were then continuous with the covering of the hernia.

To summarise these facts, the left half of the abdominal parietes, although ill-developed, was complete, while the right half was deficient in the rectus and in the greater part of the aponeurosis of the obliquus externus.

Of other irregularities in the muscular system, it may be mentioned here that the diaphragm, although not defective, had its convexity downwards into the abdomen instead of upwards into the thorax. The glutei maximi muscles were separated in their upper halves by the sac of the meningocele, but the protrusion of the sac was so slight that there was no indication of its presence on the external surface of the body. The sartorius of the left side had two heads of origin, one, as usual, from the anterior superior spine of the ilium, and the other from the lumbar vertebræ with the highest fibres of the psoas magnus, the two parts of the muscle uniting about the middle of the thigh. The peroneus tertius of the right leg was absent, and the psoas parvus was wanting on both sides.

The abdominal viscera.—These were uniformly stained of a dark colour, and so matted together by inflammatory adhesions that the dissection was rendered very difficult, and the microscope had often to be resorted to for the identification of parts. On that account the interpretation of certain points is made somewhat doubtful. The liver, bowel, bladder, and part of the internal genital organs were contained in the hernia under cover of the parietal peritoneum, which, to a large extent, was only loosely attached to the outer wall. The other organs occupied their proper places.

In the quadrate lobe of the liver there was a cyst about the size of a hazel-nut, and the organ was otherwise slightly modified in form by the abnormal disposition of the umbilical vein. The caput cæcum coli was scarcely distinguishable, as there was no vermiform appendix, and the colon was very little wider than the ileum. After a very short course the

large bowel opened into the right upper corner of a sac, the dilated bladder, or cloaca, into the lowest part of which the vagina also opened. Concealing the orifice of the vagina, there projected into the cavity from below a small cauliflower-like excrescence, the bleached and furrowed surface of which, like that of sodden skin, contrasted strongly with the dark, smooth walls of the cavity. Histologically, this excrescence presented the characters of skin, and it was in continuity with the walls of a canal, the external opening of which has already been mentioned as the meatus urinarius. The wall of this canal in the lower two thirds of its length showed numerous sebaceous glands; and fine hairs projected into the lumen. Obviously, the structure was an invagination of the skin. It extended upwards for a distance of 2 inches, its highest point being above the level of the pelvic brim; but whether it formed a completely pervious outlet from the cavity of the cloaca to the external surface was not ascertained. The histological characters of the canal, and its relation to the cloaca and the orifice of the vagina, clearly indicate that it was the proctodæum.

Normally the proctodæum is a very shallow depression of the perineal region, reaching in the female no deeper than the labia minora. In this case the ingrowth of the epiblast had gone far into the trunk of the embryo to reach the abnormally placed cloaca; or, union between the two having been effected at the usual level, the epiblast had been drawn out into a long tube by traction upwards on the cloacal structures. The importance of this point in respect to the causation of the whole condition of the foetus will afterwards be considered.

Urino-genital organs.—Both suprarenal bodies were well developed, but only the left kidney was found, and it consisted entirely of a conglomeration of small cysts. It is possible that a displaced and atrophied right kidney escaped notice among the many enlarged lymphatic glands of the abdomen, but as no trace of the right renal artery could be discovered on a careful dissection of the aorta, nor any evidence of the existence of the right ureter, it is more probable that the organ had never been formed at all. In that, as in some other respects, the present case would resemble one described by Drs. Marshall and Lindsay in the *Glasgow Medical Journal* of June, 1901.

The ureter of the existing left kidney had been broken into two parts. The part proceeding from the kidney ended in a mass of inflammatory exudation, in which, also, the left Fallopian tube was imbedded. The portion attached to the

bladder was about an inch in length, and a probe passed into its vesical orifice showed that it ended in a cul-de-sac.

Of the internal genital organs but little can be said, they were so buried in inflammatory exudate. It is only certain that the vagina, uterus, and both tubes had been formed, but the ovaries were not discoverable.

The vascular system.—The abdominal aorta was remarkably shortened; the vessel and the roots of its principal branches could almost be covered by a threepenny piece. The single umbilical artery joined the right internal iliac, and there was not the slightest rudiment of the corresponding vessel on the opposite side. The umbilical vein passed directly into the substance of the left lobe of the liver, forming no external communication with the portal vein or with the vena cava (ductus venosus). Artery and vein passing down inside the front wall of the hernia formed a triangle with the ligament that closed the pubic gap as its base; and immediately beneath the apex of this triangle, and so between the vessels, was situated the unnatural anus or urachal opening of the cloaca. In the heart there was a central perforation of the septum ventriculorum.

Etiology.—Fissura abdominis is as frequent among single births as in twin pregnancies, so that the character of the gestation in this respect might be considered to be of no moment in the causation of the condition. Nevertheless, the association of a normally developed twin with a foetus malformed in this manner ought not to be ignored in dealing with the etiology of the malformation in the particular instance in which it occurs. The regular development of the normal twin is at least a check experiment of the strictest kind, by which the validity of any hypothetical cause may be tested. Where one of the two embryos derived from a single ovum is unaffected, as in the present case, no hostile agency that would act on both alike, such as the toxicity of the maternal blood, can be regarded as the leading factor in the causation. An unfavourable environment, when it exists, may, indeed, have an important rôle to play in the production of the deformity, but its action must be secondary to a difference between the embryos themselves.

That embryos derived from the same ovum should differ in constitution from the very beginning of development appears at first sight to be improbable, but the improbability vanishes when one remembers that differentiation is effected even in the first pair of daughter cells that result from the cleavage of the fertilised ovum, since these become

the immediate ancestors of different groups of cells that fulfil different functions in the subsequent development. It is a fair inference that differentiation may also be effected in the cell division that gives rise to two germinal areas in the one ovum, and the inference is strongly supported by many of the facts of twin pregnancy. Homologous twins occasionally display an extraordinary similarity, even to the simultaneous occurrence of like pathological conditions in both; but, in general, the phenomena of multiple pregnancy indicate the early establishment of differences between the embryos. The disparity in size between twins at birth is a matter of common knowledge, and this disparity is sometimes so great as to have given rise to the notion of superfœtation. *Fœtus papyraceus* is another outcome of the struggle for existence between unequal competitors: and there is reason to believe that the struggle may sometimes end in the complete disappearance of one embryo, so that the twin conception ends as a single birth. But it is in *acardiacus* that the initial difference which may exist between homologous twins is most clearly shown. This difference is expressed in the more rapid development of one embryo, whereby it is enabled to preoccupy the available area of placentation to the total or partial exclusion of the other. The unsuccessful competitor then sinks to the status of a parasite, and its development, even more than its growth, is profoundly affected by the consequent malnutrition.

An original difference between the twins, and inequality in their rates of development similar to that which occurs in *acardiacus*, is manifested in Dr. Ritchie's case by the unequal division of the placenta: and the allocation of an abnormally small portion of the organ to the nourishment of the malformed fœtus raises the question whether here also, as in *acardiacus*, the malformation was due to malnutrition. Not merely was there a seemingly inadequate placenta, but there was also only one umbilical artery, a point in which the specimen agrees with 50 per cent of the monstrosities of its own class, and with very many *acardiac* monsters. It has been held by some that defective closure of the body walls is due to insufficiency in the supply of the constructive material; and certainly in *acardiacus*, in which malnutrition has been demonstrated, this condition is of frequent occurrence. But in *acardiacus* the malnutrition is of an extreme kind, and is dependent on circumstances which did not exist in the present case. The *acardiac* monster is nourished wholly or chiefly by the effete blood of the other twin passing to it through the anastomosis of the placental vessels. It has already been

pointed out that there was no continuity of the larger vessels in this instance, and the capillary anastomosis which doubtless existed would be rather to the advantage of the malformed *fœtus*.

The apparent insufficiency of the placental circulation in the case is deserving of attention, but it must not be forgotten that in many examples of the same kind of malformation there is no such insufficiency. These last might indeed be regarded as likewise resulting from defective nutrition by assuming a faulty state of the maternal blood; but in the absence of proof of such a condition they stand in the way of referring fissure of the body walls to malnutrition.

Dr. Ritchie's case cannot be taken as a minor form of *acardiacus*, as at first sight it appeared to be, nor can it be shown that the surviving twin brought about the deformity of the other by interfering with its nutrition. Nevertheless, there is ground for believing that the presence of a twin in the uterus was a factor in the causation of the malformation.

The chief value of the present case lies in the evidence which it offers in favour of the truth of Ahlfeld's theory as to the origin of *gastroschisis*. According to this theory, defective closure of the abdominal walls is due to the resistance of the vitelline duct retaining the bowel outside the body cavity, and so preventing the closing-in of the parietes.

Up till the beginning of the third month of development the vitelline duct (stalk of the yolk sac) remains attached to the ileum, and holds a loop of it within the root of the umbilical cord. It ought then to rupture, and allow the bowel to slip back into the abdomen. If it does not, umbilical hernia results. But for the grosser forms of hernia in this region something more is required. This, according to Ahlfeld, is supplied by the rapid accumulation of the amniotic fluid. Normally, the growth of the amnion tends to press the yolk sac gradually away from the body of the embryo; but if the amniotic fluid accumulates rapidly, and the stalk of the yolk sac is very resistant, the outward thrust may cause the whole of the viscera to be dragged out of the abdomen. Ahlfeld has demonstrated the persistence and large size of the vitelline duct in some cases of this kind.

Among the many inflammatory bands seen in the abdomen of this *fœtus* there was one which attracted attention by its thickness and greater regularity of form. It ran from the mesenteric attachment of the ileum to the front wall of the hernia. Sections were made of it, and these were seen to contain two vessels and a spot of deeper staining. There

could be no doubt that the structure consisted of the vitelline veins and obliterated vitelline duct, and its presence was so much confirmation of the truth of Ahlfeld's theory. But there was a difficulty about applying the theory without modification to the explanation of the abdominal hernia in this instance.

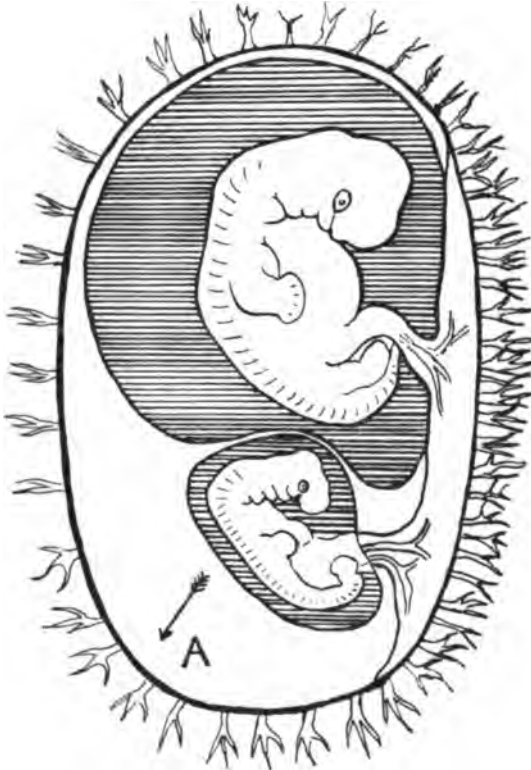


FIG. 3.

Diagram showing unequal development of homologous twins. *A*—Vacant space in the chorion into which the smaller embryo retreats before the pressure from the amnion of the larger one, causing traction on its allantois.

The band in question was, at least, 2 inches in length. It permitted the free movement of the bowel, and did not hold it at the summit of the hernia as one would have expected it to do had it been the source of traction. Nor did it appear likely that it had acted in another way suggested by the same author, namely, by displacing forwards the allantois, and so

preventing the complete closure of the body. There was, in short, only its large size in favour of its being the offending agent. On the other hand, there were certain points which indicated that the *allantois* had been subjected to traction. These were the upward displacement of the cloacal sac, and the great lengthening of the proctodæum. The abnormal course of the umbilical (allantoic) vein through the liver is also explicable on the supposition that it had been drawn forwards by the allantois, over which it ran, so that the liver substance formed for the most part behind it instead of in front of it, as it should have done. It remains to consider in what way traction on the allantois could have been brought about.

The forcing of the yolk sac away from the body by the growing amnion is made possible by the firm consistence and globular form of the sac; but the allantois naturally lengthens as the amnion grows; and it is, besides, soft, compressible, and elongated in form. In order to bring about the required result, the distance between two fixed points, the attachment of the allantois to the gut, and its attachment to the chorion, must be increased more rapidly than the ordinary rate of growth. For this to be effected by the amnion the amniotic fluid must be under greater pressure in front of the embryo than behind it, and that will be possible only when the amnion is adherent all round the embryo. The presence of a more rapidly developing homologous twin, however, supplies the necessary conditions without such large assumptions. The two embryos being attached close together, the amnion of the more vigorous one, spreading with greater rapidity over the inner surface of the chorion, will thrust the smaller one away from its point of attachment, it will at least exercise pressure upon it, and to escape this pressure the smaller embryo will tend to retreat into the vacant space left in the chorion, that is, away from its attachment, whereby its allantois will be dragged upon. The diagram (Fig. 3, p. 178) is intended to illustrate the supposed conditions.

SYMPHYSIOTOMY: REPORT OF A CASE OF CONTRACTED PELVIS AND PREGNANCY, TERMINATED AT FULL TIME BY SYMPHYSIOTOMY.¹

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AND

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MRS. A., aged 31, suffered in her childhood from rickets, and was unable to walk till she was 4 years old. I attended her at her first confinement five years ago. She went to full time, but the child had been dead for some days. Labour was very tedious, but terminated without any surgical operation or serious instrumental interference. She made a good and quick recovery.

On 7th February of this year I was again called to Mrs. A., who was in labour at full time. Recognising that, with the existing deformity of the pelvis at the inlet, some operative procedure must be adopted, I obtained the assistance of my friend, Dr. A. W. Russell, who suggested that by the performance of symphysiotomy the inlet of the pelvis might be so far widened as to allow of delivery with the aid of forceps. Accordingly, Dr. Russell operated the following day, with the assistance of Dr. George N. Turner. The operation was quickly over, and forceps were applied, but very great difficulty was experienced in getting the head through. When born, the child's heart was acting, but artificial respiration had to be employed for some time before voluntary respiration was established.

The subsequent management of the case was carried through by me. The wound was dressed with iodoform gauze, and healed quickly, except at the spot where an opening had been left for drainage. For a day or two urine had to be drawn off with the catheter, and for some time the bladder was rather irritable. The patient was kept in bed for six weeks. Her recovery was retarded by thrombosis of the veins of the right leg, which is still somewhat swollen. She is now able

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 2nd May, 1902.

to move about freely, and to walk a considerable distance. She experiences no pain or uneasiness at the symphysis pubis.

In this case, we discussed the propriety of Cæsarean section, but, as the issue of the case shows, were fortunate in selecting symphysiotomy. The operation is easily and quickly performed, and without serious shock to the patient. The after-treatment is very simple. I desire to emphasise this, for, in our case, though the circumstances of the people were comfortable, the nursing was of the most elementary kind—the nurse being old, and having to act both as nurse and housekeeper.

I cannot help thinking that this operation is particularly worthy of the attention of practitioners remote from a maternity hospital or from special surgical assistance. Anyone so situated, having the responsible management of a case with serious pelvic deformity, might hesitate to perform Cæsarean section, but could easily undertake symphysiotomy, probably with no more risk to the patient than were he to do craniotomy, and with the encouraging hope of saving the child.

One part of the operation seemed to me particularly troublesome, and meant keeping the patient much longer under the anæsthetic than would otherwise be required could it be dispensed with. I refer to the suturing of the symphysis. In our case, as Dr. Russell will explain, the sutures snapped, and the bones were kept in apposition by the application from ilium to ilium of a broad strip of adhesive plaster, and firm bandaging. This proved quite sufficient, and would seem to indicate that actual suturing of the symphysis is not needed. It has occurred to me that a clamp which would grip the iliac bones, and which could be tightened by means of a conical screw, might be easily devised. This could be worn during the time the patient is confined to bed, and would not interfere with the dressing of the wound. Further experience of this operation, however, may prove even this to be unnecessary.

The operation (by Dr. A. W. Russell).—On 7th February, late at night, I was asked by Dr. Dun to see the patient whose case he has just described. She was in labour, and had a marked pelvic contraction, which seemed likely to interfere with its natural course. The only measurement that I took was the diagonal conjugate, which was $3\frac{1}{8}$ inches, and the pelvis was small. The os was dilating, and the membranes were intact. The child seemed to be of average size; the vertex was presenting, but was high up and could not be

made to enter the brim. The position was L.O.A. We decided that one of three courses had to be taken—craniotomy, symphysiotomy, or Cæsarean section. After the nature of the case was explained to the husband, we chose symphysiotomy. With the help of a sedative the patient got some rest during the night, and her pains during the following day were not specially exhausting. At the operation I had the assistance of Dr. G. N. Turner and a trained nurse, besides Dr. Dun himself for the anæsthetic, and I am indebted to all for very efficient help.

After removing the pubic hair and thoroughly cleansing the external parts, I made an incision in the middle line from the level of the upper edge of the symphysis pubis upwards for nearly 2 inches, and quickly cut down upon the attached tendinous structures, which, however, I did not detach by any transverse incision, but by preference opened by a longitudinal slit sufficient to let the handle of the knife in, so as to clear the posterior surface of the symphysis. In doing this I also used the finger to get the bladder well separated, not only in the middle line but laterally. I then slipped a short, slightly curved, probe-pointed bistoury along my forefinger, and cut through the symphysis with little difficulty. I took special care to keep away the urethra with a sound in it as I cut through the lower part of the symphysis. Dr. Turner was by this time grasping the pelvis firmly to prevent sudden separation. When the division of the symphysis was completed, and the ends had separated, the wound was stuffed with sterilised iodoform gauze, and covered with a big guard wrung out of antiseptic solution. The patient was now put in Walcher's position by being pulled to the end of the high kitchen table on which she had been placed for the operation. I applied Neville's axis traction forceps, and as I found that the vaginal tissues needed considerable stretching before I could hope for delivery without dangerous and extensive laceration, I used the forceps intermittently, always relaxing my grip of the head by slackening the screw, which can be done so easily with this form of axis traction handle. At the end I began to fear for the child's life, and pulled more strongly, causing a moderate laceration of the vagina to the left of the urethra. It took about twenty minutes of artificial respiration by Schultze's method to bring the child round. It weighed 8½ lb.

After a vaginal douche, I proceeded now to close the wound. I had tried to get kangaroo tendon for the suture of the symphysis, but failed, and used instead thick sterilised catgut double, which I applied in the form of a mattress suture. I

did not think it safe to close the superficial wound anteriorly for at least twenty-four hours, so I led a thin iodoform gauze drain down the back of the symphysis and closed the rest of the wound with silkworm-gut. This drain was to be removed on the second day. When I proceeded to attend to the vaginal laceration the change of position caused the snapping of the whole of the symphysis sutures with sharp reports. Chloroform and patience were alike exhausted, so I put on three strong wide straps of adhesive plaster, and fixed securely a specially strong, unyielding binder made of jean.

The progress of the case to recovery, notwithstanding the primitive nursing she received, was uninterrupted, as Dr. Dun has already described. I have seen the patient this week, and have examined her. Her child is alive and well. Considering the complication arising from the thrombosis, she has recovered strength remarkably. She was moving about and carrying her baby in her arms when I called, and she preceded me upstairs without difficulty as to walking. The diagonal conjugate diameter measures now $3\frac{1}{2}$ inches, and the pubic symphysis seems to be firmly united, no gap being discoverable to the touch. There is evidence of there having been some vaginal laceration internally as well as at the entrance, there being a thin crescentic projection of cicatricial tissue across the vagina from the cervix to the left side.

As this operation has not been performed frequently in this country, and has not been previously discussed in this Society, I may be excused if I add to my account of the operation some further remarks on the subject. I shall do so under the following headings:—

Diagnosis.—The recognition of contraction at the brim is easy, but when it is a question of operative procedure it is most important to ascertain the exact length of the diagonal conjugate and the shape of the pelvic cavity, and the other diameters should also be noted. At the same time, the size of the child in its relation to the pelvic passage should be estimated, and, if the presentation is amiss, it should be righted by version or otherwise. In our case, the diagonal conjugate did not exceed $3\frac{1}{2}$ inches, which, calculated in the usual way, would give a true conjugate of less than $2\frac{1}{2}$ inches, a diameter which forbade symphysiotomy; but I had noted that the posterior surface of the symphysis was unusually shelving or oblique, so that I was not disposed to estimate the true conjugate at less than $2\frac{3}{4}$ inches. The child's head seemed also to be of moderate size. The fetal heart was heard, and

the mother's health was satisfactory. For these reasons we decided on symphysiotomy.

The operation.—The revival of this operation, which had fallen into disrepute on account of its high mortality, has been made possible by the improved results obtained by asepsis in operating. In the clinic at Naples, where Morisani¹ resuscitated the operation, there were 24 consecutive cases without a maternal death, and with the loss of only 1 child; while Pinard,² in Paris, had 19 consecutive successful operations as regards both mothers and children, and Zweifel,³ at Leipzig, had 23 consecutive operations without a maternal death. The mortality over a large number of cases by different operators, however, is still over 10 per cent, a figure that we may confidently expect to be reduced by improved technique, and by greater discrimination in the choice of operation.

The *object of the operation* is to increase the size of the pelvic cavity. This is accomplished by three different movements of the innominate bones—(1) Rotation on a vertical axis, allowing separation of the pubic bones outwards, increasing the transverse diameters, but not, as has generally been presumed, adding much—indeed, sometimes not adding anything—to the true conjugate. Sandstein,⁴ in a very exhaustive paper on the pelvic changes in symphysiotomy, recently published, based on a series of experiments on cadavera of all ages, shows this conclusively. (2) Rotation on a horizontal transverse axis, allowing descent of the pubes. (3) Rotation of the os innominatum on its own long axis, also allowing downward movement of the pubes. It will be remembered that Walcher,⁵ in the obstetrical position which he has recently introduced, taking advantage of the well-known "nutations" of the sacrum, has obtained an increase of 4 millimetres (nearly a quarter of an inch) in the true conjugate. The descent of the pubic bones obtained by symphysiotomy (second and third movements) is thus an extension of the increase obtained by Walcher's position. Hence the advantage of using this position during the delivery of the child. Sandstein⁶ has shown that 6 centimetres (nearly 2½ inches) is the limit of safe separation of the pubic bones,

¹ Morisani, quoted by Greig Smith, *Abdominal Surgery*.

² Pinard, *Rev. de Chir.*, February, 1893.

³ Zweifel, quoted by Norris, *Text-book of Obstetrics*.

⁴ Sandstein, *Journal of Obstetrics and Gynaecology of the British Empire*, March, 1902.

⁵ Walcher, *Cent. fr. Gyn.*, 1889, p. 892.

⁶ Sandstein, *Journal of Obstetrics and Gynaecology of the British Empire*, March, 1902.

and that the increase of true conjugate thus obtained is 1 centimetre (two-fifths of an inch). He also fixes the minimum true conjugate at 7·3 centimetres ($2\frac{7}{8}$ inches), and he warns specially against unequal movements on the two sides as being likely to cause rupture of the ligaments, or injury to soft structures (bladder, &c.)

Two chief *modes of operation* are in vogue, the open and the so-called subcutaneous incision, and each has its place—the latter being available for cases where great difficulty is experienced with the forceps alone, and serious injury to mother or child becomes likely.

Two varieties of subcutaneous division have been described. In one (Ayres'¹), a pointed tenotomy knife is introduced under the clitoris, and pushed up in front of the symphysis to make a track for a director. A probe-pointed curved tenotomy knife is then inserted, and the symphysis is cut through from above downwards, a finger in the vagina and a sound in the urethra protecting the structures behind and below. In the other (Herman's²) a pointed tenotomy knife is introduced through the mucous membrane opposite the middle of the symphysis, and at once cuts downwards through the joint and through the ligamentum arcuatum. The knife is then reversed, and cuts upwards.

The case that we have described could not have been managed in this way, and where the diameter ranges from $2\frac{3}{4}$ inches to 3 inches the open incision I have described is to be preferred, as by it the tissues can be better preserved from laceration or severe bruising, and hæmorrhage can be controlled. I shall not discuss at this time the preparatory or preliminary enlargement of the pubis by operation as proposed by Frank.³ Some of the *special difficulties and complications* may be here noted.

1. *Sepsis*.—This is frequently noted as a cause of death. Scrupulous care as to asepsis from beginning to end will minimise this danger. Drainage is difficult, but this may be effected, as suggested recently by Zweifel,⁴ by making an opening into the vagina behind the symphysis to drain the prevesical pocket.

2. *Hæmorrhage* has sometimes been difficult to control. A blunt separator or the finger should be used behind the symphysis, the clitoris should be avoided in front, and the

¹ Ayres, *American Journal of Obstetrics*, 1897, vol. xxxvi.

² Herman, *Difficult Labour*, second edition.

³ Frank, *Monatsch. f. Geburtsh. u. Gyn.*, 1896, Bd. 3, S. 491.

⁴ Zweifel, *Centr. f. Gyn.*, No. 13, 1902.

pelvis should be firmly controlled as regards separation of the pubic bones.

3. *Injury to the bladder and urethra.*—This can be averted by proper separation of the tissues beforehand, and by preventing unequal movements on the two sides.

4. *Anchylosis.*—Sandstein¹ says that in all the bodies on which he experimented he did not meet with one, even at the age of 70, where there was anchylosis, and he attributes the difficulty to abnormal direction of the symphysis. He does not believe that anchylosis occurs.

5. *Necrosis.*—This is apt to occur where the bone has been laid bare by the saw or knife, and it will be possible to avoid this if better search is made for the symphysis so that separation may be effected through the cartilage by the knife alone.

6. *Sloughing of vagina and vulva.*—If gradual dilatation of these structures is accomplished by patient intermittent pulling with the forceps, this should not readily occur in suitable cases. If it be severe, it is questionable if the right operation has been selected.

7. *Lameness* from a loose condition of the symphysis, or injury to the sacro-iliac joint. This is probably exaggerated, as experiment and experience prove that these important joints are not seriously impaired by the operation.

As an appreciation of this operation, I wish, finally, to say that I believe it is now likely to find a permanent place in our obstetrical work. Its mortality has already been reduced in a series of cases by experienced operators to about 5 per cent, and its morbidity is less than that of craniotomy. It usually gives the patient a slightly more roomy pelvis, through which a living child may afterwards be born by induction of labour. Though it may sometimes be a more troublesome operation than Cæsarean section, it must always be less formidable, and it can be done in humble circumstances in a private house.

With Cæsarean section for the smaller diameters under $2\frac{3}{4}$ inches, and symphysiotomy for the larger up to $3\frac{1}{4}$ or $3\frac{1}{2}$ inches, the barbarous procedure of craniotomy should never be required where there is a living child.

¹ Sandstein, *Journal of Obstetrics and Gynecology of the British Empire*, March, 1902.

CURRENT TOPICS.

ANDERSON'S COLLEGE.—Dr. Robert Fullarton, M.A., has been appointed Professor of Physiology in the College, in room of Dr. Ernest Thomson, resigned.

GLASGOW VOLUNTEERS AT NETLEY.—The Glasgow companies of the Royal Army Medical Corps (Volunteers) spent the first week of August in camp at Netley. The corps was encamped in a field behind the Royal Victoria Hospital, and was under the command of Lieut.-Colonel Beatson, C.B., accompanied by the following officers:—Major Somerville; Captains Moyes, Graham, Reid, and Halliday; Lieutenants Edington, Dunning, Sloan, Wright Thomson, Young, and Kilpatrick Thomson; Quartermasters and Hon. Lieutenants Lee, Millar, and Singer. Lieutenant Mackintosh, assisted by Lieutenant Bruce, was in command of the transport section. There was a large attendance of the men. Major Richardson, from Carnoustie, was also present in the camp, with trained ambulance dogs.

On Tuesday, the 5th, Surgeon-General Townsend, C.B., C.M.G., inspected the camp in the forenoon, and in the afternoon inspected the corps in the field in front of the officers' mess. The work comprised company drill, bearer-company exercise, and cyclist section practice, the last of which specially interested the inspecting officer. Major Richardson demonstrated the usefulness of trained dogs in discovering wounded—the patients being distributed in a plantation in the hospital grounds. On the following day there was a camp "sing-song," which was much appreciated by the men and their friends. On the 7th, a large number were sent to Southampton to witness the Australians play Hampshire at cricket; the party was accompanied by the pipe band, which played at intervals on the ground, to the delight of the spectators. On the 8th, the party detailed for the coronation proceeded to London, and on Saturday, the camp was struck, and the corps, having arrived at King's Cross, was dismissed.

In addition to camp work, a certain number of the men were daily on orderly duty with the regular R.A.M.C. in the hospital.

THE SOCIETY OF MEDICAL PHONOGRAPHERS.—This Society will hold its next annual shorthand examination early in May,

1903. Two prizes will be offered, each of the value of £5, one for first-year students and one for students of more than one year's standing. The competition will be open to any registered medical student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates should send in their names before 15th April, 1903, to Dr. P. G. Griffith, Bonhams, Farnborough, Hants.

NEW PREPARATIONS, &c.

"TABLOID" LITHIUM CITRATE AND SODIUM SULPHATE (EFFERVESCENT) (London: Burroughs Wellcome & Co.)—Each product contains lithium citrate gr. 5, with sodium sulphate gr. 30, and when added to the requisite quantity of water provides an agreeable effervescing draught, which may be administered in gouty and other conditions where lithium citrate with a gentle laxative is indicated. "Tabloid" lithium citrate and sodium sulphate (effervescent) is issued in tubes containing twenty-five.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING IX.—7TH FEBRUARY, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—TWO CASES IN WHICH TRAUMATIC GANGRENE WAS ASSOCIATED WITH SIMPLE FRACTURE: AMPUTATION: RECOVERY.

BY DR. JAMES LAURIE.

CASE I.—J. B., aged 55, shipyard labourer, was admitted to the Greenock Infirmary on 30th June, 1901, suffering from an

oblique fracture of the heads of the tibia and fibula, and of the middle of the tibia. There was a small wound at the back of the knee, which passed downwards to the injured bone. There was considerable bruising and discolouration of the foot and leg, extending above the knee-joint.

The foot was cold, and no pulsation could be felt in the posterior tibial, and a diagnosis of rupture of the popliteal artery at its division was made and amputation advised. This he would not consent to. Meanwhile the parts were rendered aseptic by washing with 2 per cent lysol, turpentine, and methylated spirit, and the whole limb swathed in sterilised cotton. The leg was put up on a double inclined plane, and the temperature taken every four hours. The chart was interesting. Every evening the temperature rose to 101·4°, and gradually declined to 99° F. in the morning. Concurrently with this temperature the leg showed all the signs of moist gangrene, the varied changes of colour, and the formation of bullæ, and later a line of demarcation below the knee. This continued getting more marked until 3rd July, when he consented to amputation.

The leg was amputated above the knee by the anterior flap method, silkworm-gut being used for the stitches and a drainage-tube inserted. The stump was dressed next day, on account of extensive serous oozing, and the tube removed. On 7th July (four days after amputation) the stitches were removed and union was complete. He was dismissed the hospital on 16th August. The popliteal artery was found to be torn longitudinally, and the anterior tibial detached from it.

CASE II.—D. R., aged 60, joiner, was repairing the windows of a tenement, 25 feet from the ground, when the staple to which he was holding on gave way, and, on falling, he struck against a paling and bounded off a parapet wall into the basement area. He was removed to hospital on 29th September, and a fracture of the lower third of the left femur made out, a scalp wound 1 inch long, and a flesh wound of the right thigh. About the seat of fracture, and especially beneath the leg, there was very considerable swelling and bruising; the patient suffered great pain, and was in a state of complete exhaustion, requiring stimulation. Pain was very severe when the leg lay flat, and it had to be raised on pillows and sand-bags.

I saw the case in the morning, and found the toes and leg cold, and livid in appearance, with entire absence of sensation.

Pulsations in tibials gone, &c. The leg was made comfortable, aseptically prepared and covered with sterile cotton. Amputation was delayed until 5th October. During this interval—29th September to 5th October—the temperature was taken every four hours; and a similar range in the morning and evening temperatures as recorded in B.'s case was observed—viz., 100.4° in evening; 99° in morning, occasionally 97° . During this period bullæ began to form, and all the signs of moist gangrene supervened. By the precautions already detailed the blebs were kept unbroken.

Amputation in the middle third of the thigh was performed on 5th October. During the week following amputation the temperature was variable, as shown in the chart; this was due to separation of fascial sloughs and partly to the use of chromicised catgut. Hot saline baths and douching with same cleared the sloughs, and the patient left hospital with a good, useful stump. The vessel was torn straight across, above the point where it becomes the popliteal.

In connection with cases similar to these, I would ask the question—Have any of the members in such cases cut down on the vessel, turned out the clots and ligatured?

II.—CASE OF JACKSONIAN EPILEPSY.

BY DR. W. F. GIBB.

The patient, a coachman, aged 20, has suffered from asthma since childhood, but for two months before the accident to be mentioned, had been in good health. He is the fifth of a family of six children, and they, as well as his parents, are healthy.

On the afternoon of 2nd August, 1901, while standing on a bench 4 or 5 feet high, he fell, his forehead striking the edge of a cask. He was stunned for a short time, but was able to walk home, and after resting for an hour and a half he assisted his father to load some boxes at the railway station, and went to bed at 11:30 P.M., apparently well. At 5 next morning he was seized with violent general epileptiform convulsions, which continued till about 9 A.M. From this time until 12th August, when he was removed to Paisley Infirmary, he continued to suffer, at intervals varying from a few hours to a few minutes, from seizures having the following character:—The head was turned strongly to the left, eyes turned upwards and to the left, the palpebral fissures were narrowed, and

there were slight tremors of the orbicularis palpebrarum. Pupils dilated, of equal size, and inactive to light. Powerful clonic contractions at left angle of mouth, and slight twitchings of the fore-arm flexors. These fits lasted from one to ten minutes, but mostly about three minutes. During a seizure there was complete loss of consciousness, but after it passed, the patient was able to resume the conversation which had been interrupted by the fit. During the fit he was able to hold a cup in his right hand. No aura preceded, but severe headache followed each attack.

On admission, a slight abrasion mark was noticed on left side of brow, but no evidence of fracture was obtained. He was kept under observation for three days, and gradually became worse. The fits tended to gain in frequency and severity. On the 14th they had extended to the left arm and hand, then to the left leg, and ultimately to all four limbs, and over seventy seizures were recorded on that day.

When placed on the operating table next day he had two fits. A 1 inch trephine opening was made in the right parietal bone, over that part of the motor area corresponding to movements of the head and eyes. The dura appeared to pulsate more feebly than normally, and the pial veins were congested. About 1 oz. of cerebro-spinal fluid oozed away from the opening. A probe was passed around between the dura and bone, but nothing abnormal was noticed. The brain surface was dusted with iodoform-boracic powder, and the wound closed, leaving a small gauze drain at one corner. It was thought better not to replace the disc of bone. The patient had a good deal of pain in the head for a few days after the operation, and during the first thirty hours had ten slight fits, but none afterwards. He was discharged well on 24th September, and is now at work in good health, and is not troubled with asthma.

Remarks.—Seizures of this kind are probably rare as the result of injury in which violence has not been applied directly to the motor area, and neither fracture nor hæmorrhage has occurred. The fits are probably to be explained by supposing that concussion resulted in serious disturbance of the cerebral circulation, followed by a local œdema of the brain, which eventually showed a tendency to extend.

The patient continues (May, 1902) in excellent health, and the trephine opening appears to be protected by firm fibrous tissue.

III.—CASE OF MORPHINISM.

BY DR. T. BEATH HENDERSON.

Mr. W., aged 50, residing temporarily in Glasgow, sent for me on 20th March, 1901, on account of severe pain on the right side of his chest, due to intercostal neuralgia, and from which he soon recovered.

In the course of my attendance he showed me, on the dorsal aspect of both wrists and on the outer side of each thigh, large patches of cicatricial tissue, due, as he informed me, to the prolonged use of morphia by hypodermic injections. He commenced indulging in the habit twenty-four years ago, having previously learned the use of the instrument from a medical man for the purpose of relieving his father, who was suffering from cancer. Some time after his father's death, Mr. W., to relieve the pain of an abscess which gave him great distress, began to administer the drug to himself, injecting 1 grain per day in divided doses. After his recovery he continued to inject the morphia for the sake of its soothing effects, and this he continued to do for twelve years, gradually increasing the doses until he took 6 grains daily dissolved in 4 drachms of water. He injected 1 drachm of this solution at a time. He became emaciated, and felt the evil effects of the habit, but found himself unable to diminish the dose while taking it hypodermically; he then began taking it by the mouth, gradually taking less and less, until he was able to dispense with it entirely. He informed me that during the last twelve years he has never had any desire to resume its use. He went under no special treatment of any kind, and never consulted any physician on the subject.

MEETING X.—21ST FEBRUARY, 1902.

The President, DR. W. G. DUN, in the Chair.

RECENT ELECTRO-THERAPEUTIC WORK IN MEDICINE AND SURGERY.

BY DR. JOHN MACINTYRE.

Dr. Macintyre's paper will be found as an original article in our issue for August, 1902, at p. 81.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING VIII.—12TH MAY, 1902.

The President, MR. H. E. CLARK, in the Chair.

I.—CASE OF ARTERIO-VENOUS ANEURYSM.

BY MR. A. E. MAYLARD.

W. D., aged 35, was admitted to the Victoria Infirmary on 9th May, 1902, complaining of a throbbing swelling on the right fore-arm. While serving in South Africa, he was shot through the right fore-arm at Magersfontein (11th December, 1900). The bullet entered about the middle of the fore-arm on the ulnar side, and passed obliquely downwards in front of the bones, making its exit on the outer side about an inch lower down. Both cicatrices of entrance and exit were plainly



visible. About three months after the accident, he began to feel a throbbing sensation about the middle of the fore-arm, and, a few weeks later, he noticed a small swelling developing over the same situation. Since then these conditions have increased, and the condition of the fore-arm, as at present seen, shows the following features:—

All the veins of the fore-arm are greatly distended, more particularly the anterior ulnar. At the seat of the "swelling," a marked thrill is felt, and, on auscultation, a well-marked bruit heard. If the arm is constricted, the veins of the fore-arm become greatly distended, and are seen to pulsate.

It should be further noted, in connection with the case, that there was wasting and contraction of the muscles supplied

by the ulnar nerve, and also numbness over parts supplied by that nerve.

The accompanying photograph (p. 193), taken by Dr. W. H. Brown, shows the condition of the distended veins.

[*Note.*—Since patient was shown to the Society, he has been operated on by Mr. Maylard.

A longitudinal incision, about 6 inches in length, down the ulnar side of the fore-arm was made. A network of dilated veins was discovered. These were dissected out, and the ulnar artery ligatured above and below. The ulnar nerve was found to be involved in the cicatricial tissues, and, although maintaining its continuity, it appeared for about an inch of its extent to be swollen and fibrous. This apparently damaged part of the nerve was excised, and the two cut ends united. The wound was closed, and, when looked at ten days later, was completely healed. At this period, however (twelve days after the operation), there is no sign of return of power or sensation. There was no sign of any distension of the superficial vessels].

II.—CASE OF SECONDARY SUTURE OF THE MUSCULO-SPIRAL NERVE MADE POSSIBLE BY RESECTION OF THE HUMERUS.

BY DR. H. RUTHERFURD.

Thomas B., aged 15, was admitted to Ward 25 of the Glasgow Royal Infirmary on 24th September, 1900, under my care, with a compound fracture of the right humerus, due to a crush by falling coal in a pit-working. There was noted "a lacerated wound running downwards and outwards across the middle of the biceps, and a small wound above this, midway to the acromion; both contain coal dust. In the big wound, which involves nearly half the circumference of the arm, the fractured ends of the humerus are seen through the torn biceps." The skin of the region was cleaned by washing, shaving, and scrubbing with turpentine and spirit, the contused wound edges cut away, the wound in part closed, and the limb fixed in a poroplastic mould from the neck to the wrist. Healing took place in the most satisfactory manner, and patient was dismissed on 30th October—that is to say, in about five weeks.

On 12th January, 1901, he was readmitted on account of wrist-drop and inability to supinate the fore-arm, and, by the kindness of Mr. H. E. Clark, was again placed under my care.

The following note was made:—"Arm is held in position of semiflexion and complete pronation. Fingers at rest in position midway between flexion and extension, can be completely flexed, but not extended further. . . . Wrist-drop well marked. Atrophy of muscles of arm. Deep cicatrices (two), one at middle of anterior surface of arm, the other higher up. No regions of anæsthesia."

25th January, 1901 (four months after the injury).—Operation under chloroform. It seemed desirable to identify the nerve below the presumable seat of injury, and to trace it upwards; accordingly, an incision was made in the lower fourth of the arm longitudinally, so as to cross the trunk as it runs forward. As a matter of fact, the injury seemed to have occurred, not at the seat of fracture, but subcutaneously by crushing above the external condyle. The nerve first found was apparently the branch to the supinator longus. Underneath this was the distal part of the main trunk with a pointed end. Tracing the branch mentioned upwards, the lower end of the proximal part was found very slightly clubbed, with what seemed a fine continuation running downwards. On careful examination, there could be seen little or no appearance of nerve fibres in this structure, and it ran off into fibrous tissue of the periosteum and intermuscular septum. When the two ends had been cut clean, a gap was left of about an inch and a half, and, even after freeing the ends considerably and flexing the limb, they could not be brought together. I therefore shortened the limb by resection of the humerus in its lower fourth, cutting it obliquely with osteotomes and chisels. The section was rather above the cancellous region, the upper end of the portion removed showing open medullary cavity. The fragments were brought into contact, and, after drilling, secured by a nail. The nerve ends were then brought carefully together without tension, four fine catgut and one silk stitch being used. The skin wound was stitched throughout. The operation was done with an elastic band on the arm.

The first dressing was on 13th February, when the wound, being found healed and the bone consolidated, the nail was withdrawn.

The patient left hospital on 22nd February, at which time there was noted "no improvement in condition of the extensors."

On 15th May, nearly four months after the operation, there was noted—"Absolute paralysis in region of distribution of the musculo-spiral; very slight tenderness is found on pressure against the bone over the place where the nerve was sutured."

After this, I must confess to having rather lost hope of improvement, and did not send for the patient, though he was told to report himself as before, and to make what use he could of the arm and hand.

My interest in the case was reawakened by recently reported cases and discussions, and, on 3rd May last (fifteen months after the operation), he came up for examination in compliance with my request. There was then found good recovery of extension movements and of supination. For some months patient has been employed as "grease boy" in the pit, carrying a pot of grease on his left arm and handling a ladle with his right.

In future I shall be more assiduous and persistent in the endeavour to re-establish the action of the muscles by massage, electrical stimulation, and practical use.

III.—APPENDIX VERMIFORMIS, INFLAMED AND ULCERATED, FROM THE SAC OF A STRANGULATED FEMORAL HERNIA.

BY DR. H. RUTHERFURD.

The patient was a man, aged 79, admitted to the Royal Infirmary on 30th March last, after four days' vomiting, the last movement of the bowels having been on the morning of the 26th.

There was moderate distension of the abdomen, which presented the appearance typical of splachnoptosis, there being a deep fold across the front of the belly at the region of the umbilicus, with fulness below this, and a hernia in each inguinal region coming and going as the patient coughed or strained.

There was also found a small femoral hernia on the right side. It was about the size of a walnut, and seemed practically insensitive to handling. Patient, who was worn-out and more or less stupefied, stated that he had known of it before, coming and going, but that for the last few days it had been constantly present without being the seat of pain.

On opening the sac, it was found to contain (1) the appendix now shown, and (2) a partial enterocele or knuckle of small intestine, consisting only of a portion of the wall of the tube (Littre's hernia) in a state of strangulation, being almost black from congestion, with some blood-clot on its surface.

The clot having been wiped away, the appendix was freed from some adherent omentum, and found to be in a state of impending slough at a spot near its emergence from the ring,

being thinned, green, and covered with a layer of pus. It was tied above this, the stump being disinfected with phenol. After this, the stump retracted into the abdomen, and the strangulated knuckle of bowel followed it. The sac was separated and tied off, and the wound closed. There was a motion of the bowels after enema during the early morning, but patient gradually became more enfeebled, and died the following afternoon.

On *post-mortem* examination, the stump of the appendix was found apparently in good order, and the herniated bowel wall did not seem to have been damaged beyond the possibility of recovery. The appendix would seem to have been for a long time in the position in which it was found. It is wrapped in a firmly adherent portion of intestine. There is an abscess about its middle, the size of a small bean, with sloughing wall, and containing a concretion. Distal to this, there is no recognisable lumen. For an inch or so at the extremity it is deeply congested.

This is the only case in which I have seen the appendix in a femoral sac, and I am inclined to think that it is something of a rarity. A case where it had been strangulated in a femoral sac is recorded by Bayer (quoted by M'Carthy, *Ruptures*, p. 353). Its presence in right inguinal herniæ is more frequent, and I think is recognised to be due to developmental errors; whereas, in the present case, it is, I think, plainly related to the general prolapse of the viscera, splanchnoptosis or Glénard's disease, which was so well marked. The localised sloughing condition may probably be attributed to the disturbance and acute strangulation set up by the entrance of bowel into the sac.

IV.—REMOVAL OF INCOMPLETELY DEVELOPED RIGHT TESTICLE.

By DR. H. RUTHERFURD.

Dr. Rutherford showed an incompletely developed testicle (right) removed from a boy of 8 years, to facilitate operation for radical cure of hernia.

The testicle as a whole was rather less than half the size of the left one. The globus minor was markedly deficient. Sections from the body of the testis were made and examined under the microscope (shown). No abnormal structures could be seen, such as might form the starting-point of new growths. The testicle lay just outside the external ring.

V.—RUPTURE OF TUBAL GESTATION SAC.

BY DR. H. RUTHERFURD.

Dr. Rutherford showed a ruptured tubal gestation sac, successfully removed for intraperitoneal hæmorrhage within six hours of the onset—probably at the sixth week.

VI.—SPECIMEN ILLUSTRATING A RARE FORM OF AORTIC REGURGITATION.

BY DR. JOHN M. COWAN.

Aortic regurgitation may be due to several causes. The most common is a chronic sclerotic change in the cusps, whereby they become shortened or stiffened, and so unable to close the aperture; and, less frequently, an acute endocarditis may cause incompetence, either by the formation of vegetations, which may become so large as to prevent closure of the valves, or by ulcerative processes leading to loss of tissue, or perhaps to aneurysm and rupture.



FIG. 1.

The aortic valves.

The specimen that I bring before you to-night shows another but less common cause. In this case, the cusps are not defective in size, there is no necrosis or ulceration, and only a few minute vegetations are present on the ventricular aspect of the cusps. The valve was, however, markedly incompetent, and presented no obstacle to the flow of water down the aorta. The cusps are voluminous and thick, and very soft, and the

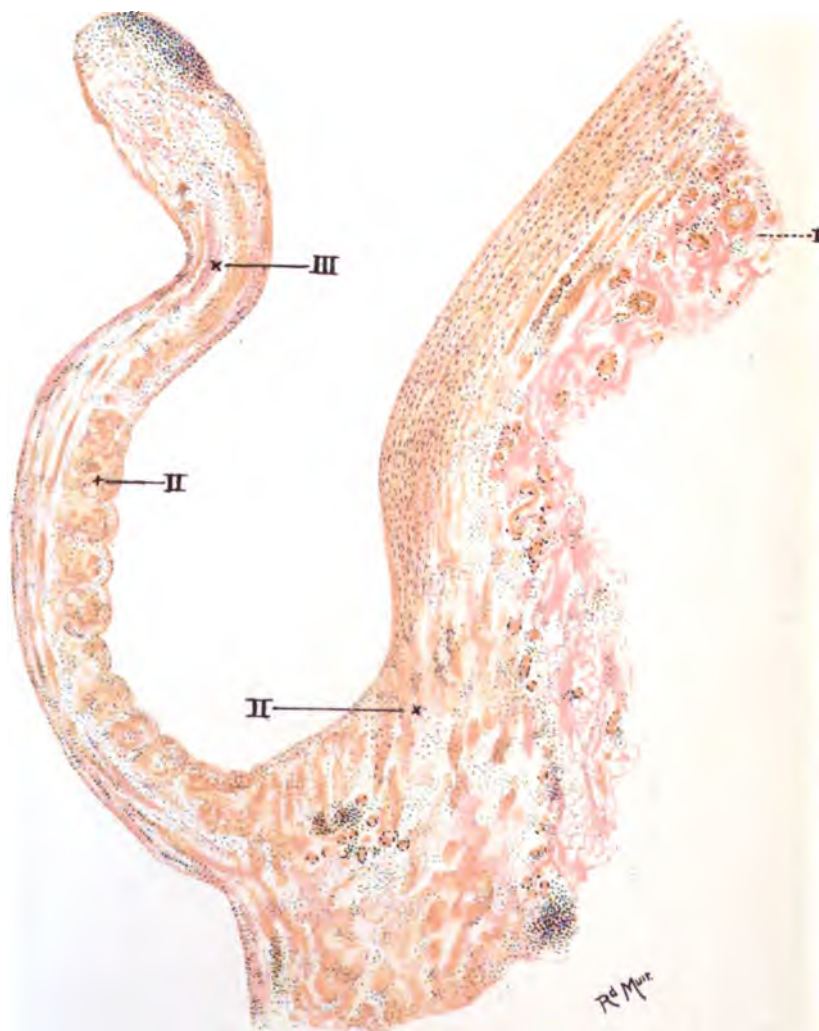


Fig. 2.

SECTION OF WALL OF AORTA AND THICKENED AORTIC CUSP.

I—Small artery with greatly thickened intima, and infiltrated muscular coat; the lumen is considerably narrowed. II—Hyaline connective tissue III—Hyaline connective tissue, but of a different nature from II, as it stains with the hæmalum, not with the cosin.

softening is so extreme that the edges are everted, and have fallen downwards towards the cavity of the ventricle.

On microscopical examination, the cusp is seen to be much thickened, and the connective tissue is degenerate over a large area, both the ordinary hyaline change and anæmia being present. The nature of this latter is obscure, but it is differentiated from the former by its taking up hæmalum, when stained with hæmalum and orange and eosin, and by its staining pink with carbol-thionin-blue.

At the insertion of the cusp into the aortic wall there are many little aggregations of leucocytes, and in the vicinity the arterioles show a marked endarteritis, the intima being greatly with the lumen of the affected vessels. The connective tissue here also is very hyaline. Elsewhere in the aortic wall the arterial changes are but slight.

The mechanism of the lesion seems to be as follows:—The result of an acute inflammation of the vessel wall has been a new formation of connective tissue within the vessel, accompanied by an endarteritis of the vessel in the neighbourhood of the aortic wall; and, as a consequence of this interference with the blood-supply, degenerative changes have occurred in the new-formed connective tissue, leading to a weakening of the aortic cusps; the cusps, thus weakened, were unable to withstand the force of the aortic blood pressure, and gave way before it.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING IX (*continued*).—26TH MARCH 1902.

The President, DR. ROBERT JARDINE, in the Chair.

V.—LARGE PYONEPHROSIS RUPTURED INTO PERITONEAL CAVITY: ABDOMINAL SECTION: RECOVERY.

By DR. JOHN EDGAR.

Mrs. M'L., æt. 21, was admitted into the St. James's Hospital on 18th January, 1902. She was delivered of a male child on 2nd September, 1901. Six weeks afterwards she returned to a

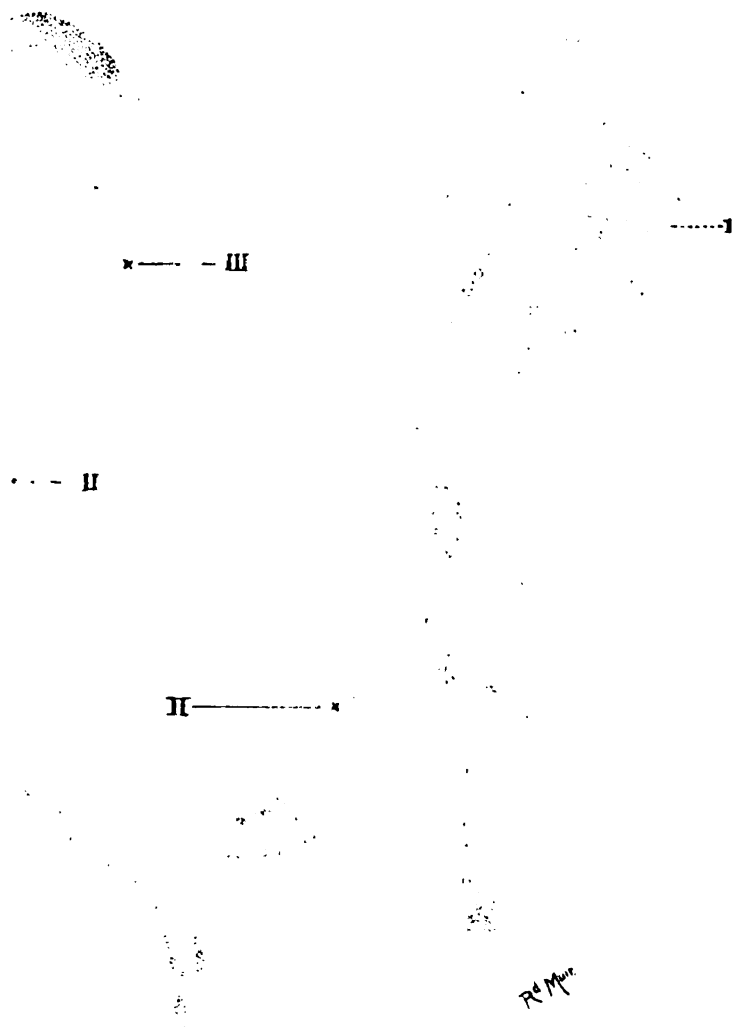


Fig. 2

- AORTIC CUSE.
- Muscular coat; the lumen is
- Hyaline connective tissue.
- not with the cosin.

softening is so extreme that the edges are everted, and have fallen downwards towards the cavity of the ventricle.

On microscopical examination, the cusp is seen to be much thickened, and the connective tissue is degenerate over a large area, both the ordinary hyaline change and another being present. The nature of this latter is obscure, but it is differentiated from the former by its taking up hæmalum when stained with hæmalum and orange and eosin, and by its staining pink with carbol-thionin-blue.

At the insertion of the cusp into the aortic wall there are many little aggregations of leucocytes, and, in the vicinity, the arterioles show a marked endarteritis, which interferes greatly with the lumen of the affected vessels. The connective tissue here also is very hyaline. Elsewhere in the heart, the arterial changes are but slight.

The mechanism of the lesion seems to be as follows:—As the result of an acute inflammation of the valves, there has been a new formation of connective tissue, which has been accompanied by an endarteritis of the vessels in the adjacent aortic wall; and, as a consequence of this interference with the blood-supply, degenerative changes have occurred in the new-formed connective tissue, leading to a weakening of the aortic cusps; the cusps, thus weakened, were unable to withstand the force of the aortic blood pressure, and gave way before it.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

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MEETING IX (*continued*).—26TH MARCH, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

V.—LARGE PYONEPHROSIS RUPTURED INTO PERITONEAL CAVITY : ABDOMINAL SECTION : RECOVERY.

By DR. JOHN EDGAR.

Mrs. M'L., æt. 21, was admitted into the Samaritan Hospital on 18th January, 1902. She was delivered of a child on 2nd September, 1901. Six weeks afterwards she noticed a

lump in the right lumbar region. It increased steadily in size till admission. There was considerable pain, perspirations, but no rigors, also some pus in the urine, and she was emaciated and very anæmic.

On examination, a large fluctuant mass, measuring 6 inches vertically and $7\frac{1}{2}$ inches transversely, was felt in the right lumbar region. It extended forwards to $2\frac{1}{4}$ inches to the left of the umbilicus. The surface was smooth, and the ascending colon lay superficial to it.

The uterus and appendages were normal, while the right ovary could be felt free at the lower margin of the mass, on a level with the pelvic brim.

On 24th January, the patient suddenly collapsed, the rectal temperature being 96° F. Vomiting set in. There were severe cramp-like pains and cold clammy sweat. Later, the temperature rose to 101.4° F., the abdomen being distended and tender.

I did not see her till twenty-four hours after the onset of collapse, when I found her practically moribund. The pulse was very small and running; the abdomen distended and tender; the features pinched, and expression anxious. The mass in the right lumbar region was no longer felt. The patient looked as if she would die within a few hours. Two of the medical staff advised against operation on the ground that it was hopeless. However, I made an incision in the right linea semilunaris into the peritoneal cavity, when a large amount of thin greenish-yellow pus escaped. I washed out the cavity with normal saline solution, and made an opening into the kidney on its outer surface, and a corresponding opening in the lumbar region. Two rubber drainage-tubes were passed through the lumbar incision into the kidney, and a glass drainage-tube through the anterior incision into the peritoneal cavity.

Strychnine, one-thirtieth of a grain, was injected hypodermically, and a pint and a half of saline solution was infused into the axilla. The patient rallied gradually. The anterior wound healed quickly, and the patient was dismissed on 27th March.

I saw her yesterday (22nd April). She was looking well, much stouter, and not so anæmic. The lumbar wound is now being dressed every second day, and there is still some pus coming from the kidney, which can be felt in the lumbar region. It measures $3\frac{1}{2}$ inches vertically and 3 inches transversely. Its inner border is situated at the anterior scar, $2\frac{1}{4}$ inches to the right of the middle line.

VI.—CANCER OF THE RECTUM: RESECTION: RECOVERY.

BY DR. JOHN EDGAR.

Mrs. M'V., æt. 53, was admitted into the Samaritan Hospital on 4th November, 1901, complaining of rectal hæmorrhage of thirteen months' duration. The menopause took place twelve years ago. She had five children, the youngest 19 years old. She had constant tenesmus, and for six months prior to admission, constant dull pain in the rectum. There was progressive emaciation, the skin being sallow and the eyes sunken.

On rectal examination, a papillomatous mass, measuring $1\frac{1}{2}$ inch vertically, was found an inch above the anus. It involved the whole circumference of the rectum, with the exception of a portion, an inch in breadth, on the left side anteriorly. The tumour bled on touch, and was movable. The inguinal glands were apparently normal. The uterus had undergone senile atrophy, but was otherwise normal.

The patient was unæsthetised on 6th November, 1901, and placed in the dorso-sacral position. An incision from the tip of the coccyx to the anus was made, and then carried round the margin of the anus. A finger being inserted into the bowel, the rectum was isolated by deepening the incision all round up to an inch above the upper margin of the mass.

The rectum was then cut away, bleeding points being caught in forceps and ligatured. The upper part of the rectum was then pulled down and united by mattress sutures of silkworm-gut to the anal margin. The incision between the coccyx and the anus was also sutured with silkworm-gut. The further history was as follows:—

17th November.—Pus coming from posterior wound for last three days.

18th November.—All sutures removed. The rectum has united well with the anus. Anus wide.

21st December.—Dismissed well. Has fair control over motions.

Remarks.—1. Colotomy was not performed. It was unnecessary in my opinion.

2. It is sometimes advised to slit up the rectum posteriorly. This, I think, inadvisable, because the discharge from the cancerous mass would be apt to infect the raw surface, and the rectum can be isolated more readily when left intact.

3. It is generally said that no attempt need be made to

suture the bowel to the edge of the anus, as the stitches will be certain to tear through. Possibly it was because I used mattress sutures that they did not tear through. However that may be, the bowel united to the external opening by first intention, and so my patient has been saved the necessity of having bougies passed regularly to prevent a stricture.

4. In another case of this kind, I should drain the space behind the rectum for the first few days.

5. Patient has made an excellent recovery.

Dr. A. W. Russell, who had assisted *Dr. Edgar* at both operations, said that the cancer of the rectum was specially difficult to remove on account of its distance from the anus, but the plan he followed in freeing the bowel high up enabled him to keep clear of the diseased structure, and at the same time made it possible for him to bring the edge of the remaining part of the rectum sufficiently near the outer edge of the wound to secure healing. The recovery of the case of ruptured pyonephrosis was a remarkable instance of the triumph of surgery in desperate circumstances. The patient was moribund, and could not have lived through the day, so that the surgeon was justified in taking the most serious risk.

VII.—VESICAL IRRITABILITY AS A RESULT OF ACUTE ANTEFLEXION OF THE UTERUS, AND ITS RELIEF BY OPERATIVE TREATMENT OF THE ANTEFLEXION.

By *DR. A. W. RUSSELL.*

There are few disorders of the less serious kind that are more distressing to a patient than irritable bladder, and I am afraid that for want of well-directed treatment such cases are occasionally allowed to drift into a chronic condition, at times necessitating even the wearing of rubber reservoirs by day, and making continuous rest during the night an impossibility. Many of these cases of chronically irritable bladder are due to an acute anteflexion of the uterus, or, to be more precise, to a retroposed, retroverted uterus, which has become acutely anteflexed.

I shall give you, as an example, a short note of a typical case.

Miss M., aged 27, a domestic servant, consulted me regarding vesical irritability, her complaint being that for some time she could not walk continuously for even a short distance

without feeling the necessity to have her bladder relieved. Occasionally, too, in the house when much on her feet she had the same trouble, but it was most troublesome when she was walking even a short distance on the street, and she believed that she was getting worse. She reminded me that once, about three or four years ago, when she was in service in a doctor's house, I had been asked to see her. This, I then remembered, was owing to some slight inflammatory irritation in the neighbourhood of the uterus, and there was at that time no vesical irritability, and I had not noted any ante-flexion. Her subsequent history pointed to the probability of this condition having developed within the last two or three years. After examining the urine, and finding it normal, I made a vaginal examination, and found the uterus pulled backwards and the body acutely ante-flexed on a rather conical cervix which pointed almost in the axis of the vagina. I recommended her to have the uterus treated, and in a short time she entered a private nursing home. After the usual preparation, the cervix was dilated, and the uterine cavity was curetted. I then proceeded with what is described as Dudley's operation. I slit up the posterior wall of the cervix in the middle line as far as the point of flexion, and passed a silkworm suture through the tip of cervix at the point where the incision began, and entered again at the angle or deepest part of the incision, bringing the needle out on the vaginal surface of the cervix. I then reversed this order with the needle so as to bring it out at a point corresponding to the first point of entrance. The suture was tightened so as to carry the separated points of the posterior lip back into the angle of incision. Further suture was not necessary in this case, but extra sutures are sometimes inserted on each side of the main suture.

When the os uteri is thus brought backwards it sometimes happens that the anterior lip projects or is redundant. In such cases Dudley denudes a small oval space near the tip of the anterior lip, and brings the two edges together with transverse sutures. This, he believes, removes the redundancy, and tends to straighten the uterine axis. No one who has not tried this simple operative treatment for acute or pathological ante-flexion would believe that it could so markedly improve the position of the uterus.

The patient was allowed to get up in a few days, and she left the home within a week. She has reported herself several times to me since the operation, and is entirely relieved of her vesical irritability.

I saw to-day the first patient on whom I did this operation. Not fully understanding at the time the meaning or intention of the anterior denudation, I made it a sort of anterior colporrhaphy, which has resulted in a linear cicatrix. The contraction of this has, I believe, somewhat interfered with the success of the operation, as it causes some dyspareunia, and also by tugging on the bladder keeps up, to a slighter degree, its irritability. This I intend to remedy.

I have done this operation now in six cases of persistent irritability, associated in several cases with dysmenorrhœa, and also with sterility. In all cases the vesical irritability has been relieved, and the patient's misery has been removed, but as yet, though it seems to be a good idea for the relief of dysmenorrhœa and also for sterility, I have not got sufficient experience upon which to generalise. In several, other treatment, such as pessaries, dilatation, and curetting, had been tried without any effect on the irritability.

I am satisfied that it is the best operation yet devised for the cure of aggravated ante flexion with its attendant troubles. I was specially struck lately with the benefit it had brought to a lady who had been worried often by night as well as by day with vesical irritability, and who had worn pessaries to relieve rectal pressure, and had been curetted carefully with only temporary benefit. She is now able to control her bladder, and vaginal examination shows that there is a corresponding improvement in the position and form of the uterus.

Dr. Edgar said he had not had a great deal of experience of Dudley's operation, because, judging partly by what experience he had and partly theoretically, he did not think the operation a good one. It was chiefly done for dysmenorrhœa. In such cases he had found dilatation and curettage under chloroform, followed by intrauterine douching for a couple of weeks, much more effective. As regards the claim that the operation cures vesical irritability, he was inclined to be sceptical, and if Dudley's theory be true, that the cause of the irritability is the shortening of the round ligament, he could not understand how this operation could lengthen them. The rational treatment, if one were to accept this theory, would be to stretch the ligaments.

MEETING X.—28TH MAY, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

I.—SPECIMEN.

BY DR. JOHN EDGAR.

In the absence of Dr. Edgar, Dr. A. W. Russell showed a cancerous uterus removed to-day by vaginal hysterectomy, and also a microscopic section of the previous curetting. The following is an abstract of the history:—

Mrs. T., aged 64, has had five children, the last twenty-seven years ago. Menopause took place seventeen years ago. She has had prolapse of uterus for at least twenty years, and has required to wear a pessary for the last seventeen years. She began to see a little sanguineous discharge last January. A week or two ago she came to the dispensary of the Samaritan Hospital, where Dr. Carstairs Douglas saw her, and recommended her for admission into the hospital for plastic operation on the vagina and treatment of the cervix. The uterus was curetted by Dr. Edgar last week, and, as the material brought away by the curette was very suggestive of malignancy, the plastic operation was put off, and to-day the uterus was removed by vaginal hysterectomy.

II.—GASTROSCHISIS IN A TWIN.

BY DR. JOHN LINDSAY.

Dr. Lindsay's paper appears as an original article at p. 171.

III.—THREE CASES ILLUSTRATING THE INFLUENCE OF DISEASE OF THE OVARY ON THE COLON.

BY DR. T. K. DALZIEL.

The group of cases which I bring before the Society to-night is of much interest, as possibly shedding some light on the etiology of one of the most troublesome affections of the nerves—colitis. For some years, the subject generally and

its possible relief by surgical interference has been under my consideration, and, after a number of successful cases of short circuiting in tubercular and ulcerative forms of colitis, it became a matter of great interest as to whether relief might not be given in that type of the disease recognised as a neurosis, and which is usually, if not invariably, met with in females of so-called nervous temperament. The fact that in many cases little or no pathological change had been found *post-mortem*, did not deter me from deciding to at least perform an exploratory incision, with the view of determining whether there might not be some organic mischief giving rise to this neurosis.

CASE I.—Miss C., aged 40, I had seen some years before with Dr. Stark, suffering at that time from violent attacks of diarrhœa, rectal pain, and tenesmus. He had recognised the fact that the left ovary was diseased, and had recommended its removal. The patient, however, was averse to any operative interference. She was subsequently sent to me by Dr. Boyd, of Largs, into whose care she had passed about nine months ago, as she was suffering from marked symptoms of colitis, with occasional discharges of considerable quantities of membrane. In the Nursing Home, the observations of the nurses amply confirmed the amount of her sufferings, which were evidently so great at times as to cause anxiety. Associated with this colitis, there was also marked circulatory disturbance, the heart being very weak, and the pulse at times registering 120 per minute. Her symptoms were not materially intensified during menstruation. With the hope that by an anastomosis we might be able to allow the region of colonic trouble to be at rest, or that some adhesions causing irritation might be relieved, I advised operation. The colon, however, was found on examination to be normal. Only the left ovary was found to be the seat of cystic degeneration, with interstitial inflammatory changes, and it was accordingly removed, a proceeding which, it is to be noted, my colleague had advised some considerable time before.

CASE II.—Miss H., aged 37, presented the symptoms of nervous colitis to a most exaggerated degree, and first came under my observation three years ago, the diarrhœa being very persistent—often ten or twelve times in the twenty-four hours—accompanied by attacks of faintness, and a most unusually rapid pulse. This condition varied from time to time, but did not seem amenable to any ordinary medicinal

treatment; careful dieting, sedative drugs, and absolute rest only helping matters without giving any indication of establishing a cure. She had well-marked tenderness along the ascending and transverse colon, and to a less degree in the sigmoid flexure. In the hope that the irritation of the colon might be due to disorder in the appendix, that organ was removed by another surgeon, but without apparent relief. Eight months ago she again came under my care, and was then confined to bed with persistent diarrhœa. She had attacks almost simulating catalepsy, lying unconscious for two or three days at a time, the pulse being generally over 120 per minute, while the temperature was abnormal. Little or no food could be taken, the digestive powers seeming to be almost in abeyance. There was marked swelling of the abdomen, from flatulent distension of the colon, and also the intestines. Some tenderness was complained of in the ovarian regions. Under these circumstances, I advised a laparotomy, when it was found that both ovaries were diseased, resembling in consistency and size a moderately large flabby oyster. There was no evidence of ovulation, and the possibility of their removal having previously been explained to the patient, both were excised. Some slight adhesions were found round the caput and the ascending colon, but not such as would account for the symptoms, and were evidently due to the slight irritation attending the removal of the appendix.

CASE III.—Miss N., aged 21, seen by me in consultation with Dr. Cullen, had suffered from persistent constipation, apparently due to paralysis of the colon. The constipation was very extreme, and huge quantities of purgative medicines failed to give relief. She suffered from a slight degree of retroflexion of the uterus, and the left ovary could be felt distinctly enlarged. She had been a confirmed invalid for three years, unable to think or read, or take any intelligent interest in things around her. In view of the conditions found in the pelvis, and the apparent hopelessness of the case, I again advised an exploratory incision, found the colon flaccid and distended, replaced the uterus by ventral fixation, and removed the diseased ovary, which, as in the previous cases, presented marked evidences of cellular proliferation throughout the stroma.

The results of the operations in these three cases was that in Case I there has since been practically no further trouble with diarrhœa, and only very mild attacks of colonic pain.

The patient, however, is still of a highly nervous temperament, suffering from headaches and feeble digestion.

In Case II, immediately after the operation, the pulse-rate commenced to fall, and within forty-eight hours was down to 80 per minute. There has not been since the operation any return of the colitis whatever, and the patient is able to take a mixed diet with good appetite. The most extraordinary feature of all, however, is the complete change in her intellectual condition. Naturally a woman of strong commonsense and mental ability, she seemed at once to regain her balance, and, with the exception that she still suffers from considerable weakness—the result of her long illness—there seems little reason to fear but that she will be restored to life a useful member of society.

Case III, which, of course, is entirely different in its features from these two cases of colitis, recovered the power of the colon within a few days after operation, so that a small quantity of simple laxative was all that was required to evacuate the bowel. The mental condition also steadily improved, until now (three months after the operation) she is, as she herself puts it, practically quite well.

I venture to bring these cases before the Society as at least tending to throw some light on a possible cause of nervous colitis, and also because they suggest the propriety in many cases of carefully inquiring into the possible existence of some poison-producing diseased structure in cases of so-called neurosis. That the ovary is often at fault I have little doubt, and, while each case must be carefully considered on its merits, I venture to think that, where life has become a burden to the patient and her friends, the sacrifice of these organs, especially when in a diseased condition, may be amply rewarded by the restoration of the individual to health.

Dr. Samuel Sloan said he was a little puzzled to know if the ovary had anything to do with these cases. He had seen great benefit from the use of large enemata of vinegar and water. He asked if *Dr. Dalziel* had ever done laparotomy for a membranous colitis, and yet benefit had resulted although nothing further had been done.

Dr. Dalziel, in replying, said he could not answer *Dr. Sloan's* question, as these were the only cases where he had opened the abdomen. He again drew attention to Case I, where only one ovary had been removed, and the patient was still neurotic. The other two cases had both ovaries removed, and were now not at all neurotic.

IV.—ON DIGITAL EXAMINATION OF THE ENDOMETRIUM.

BY DR. ALEX. MACLENNAN.

The two cases here reported are selected from a number which were examined in a similar manner. Indeed, digital examination of the endometrium is carried out as a routine in almost every case previous to curettage.

CASE I.—Miss F., was seen in the Training Home for Nurses in March of this year. She complained of dysmenorrhœa, menorrhagia, general pelvic symptoms, &c., of many years' duration.

On physical examination, the uterus was found to be prolapsed, retroverted and enlarged, especially in the fundal region. The cervix was soft, with the os patulous and apparently dilatable. It was therefore decided to elevate the uterus, and to examine the endometrium with the finger; and, if the condition warranted, to curette. On account of the condition of the cervix, it was thought that a rapid dilatation could be carried out without rupture of the cervix. Under chloroform it was found that the fundus was movable, and that the adnexa were normal. The peculiar shape of the fundus made it seem possible that a myoma existed in the right and anterior aspect of it. The sound passed $3\frac{1}{4}$ inches. Dilatation was carried out with Hegar's dilators up to No. 24, with extreme ease.

On the insertion of the finger, the reason of the easy dilatation became apparent, for a deep and extensive laceration of the cervix had occurred. The tear passed through the internal os, and extended from the external os upwards and through the left antero-lateral quadrant of the cervix.

The endometrium was found normal, but there was a myoma about the size of a walnut situated in the anterior wall of the uterus towards the right cornu. The curette removed practically nothing, and it was evident that the menorrhagia was due to the presence of the myoma, and exaggerated by the abnormal position of the uterus. The uterus was placed in an anteverted position, and the cavity packed with picric gauze. There was little hæmorrhage. The further course of events was uneventful.

CASE II.—Mrs. K., ii-para, was seen in April last. Menstruation had begun fourteen days before, and had lasted till I saw her. There had been no previous irregularity.

Pain had not been present at all. The last confinement was normal, though the lochia remained red for a considerable period.

On examination, the vagina was found full of clot, and the os was open a little. The uterus was retroverted and enlarged. As there had been no pain, abortion was excluded tentatively. A dilated tube was carefully searched for, but the adnexa were normal. It was then decided to dilate the cervix, to examine the endometrium with the finger, and to curette if that were thought advisable. The sound passed a little over $3\frac{1}{2}$ inches. The fundus was easily put into a normal position. On account of the severity of the hæmorrhage, it was decided to treat at once. The patient was put under chloroform, and the usual cleansing of the vagina carried out. Dilatation was performed up to No. 24, and, in this case also, an extensive rupture of the cervix was found present when the finger was inserted. The endometrium felt normal, though soft. Curettage was carried out, and a relatively large amount of tissue was removed, especially from the anterior wall, where it felt softish to the instrument. One piece, about the size of a small split haricot bean, looked suspiciously cellular. Hæmorrhage was very profuse. The uterus was put into a normal position, and its cavity stuffed with boric gauze, as was also the vagina. The packing was removed the next day. Further progress was uneventful. The microscopic appearances of the questionable tissue were peculiar, but Dr. Ferguson, who kindly examined it, considered them to be due entirely to an endometritis. The diagnosis was therefore one of subinvolution.

In the first case, the examination revealed a gross abnormality; in the second, the curette apparently did.

1. *Indications for such treatment.*—Is such dilatation invariably necessary before curettage? There are certain cases where this is not required, but these form the minority. Of course this also depends on what are considered conditions for curettage. The chief indication for digital examination of the endometrium is hæmorrhage, either at the period, between times, or after the menopause.

Such a dilatation of the cervix magnifies the operation of curettage; but, if carried out with the proper precautions, the risks are very few indeed. Perhaps, to put the indications for its performance thus would be correct:—In all cases where it is expected that the curette is necessary, then a digital examination of the endometrium will be advisable in order to ascertain

what amount of tissue there is to remove. It will occur to everyone that there are cases which will not therefore need to be so examined, but which will nevertheless require to be curetted. It may be stated that the curette will indicate how much tissue there is to remove, and that any tissue so removed can be microscopically examined. It is true that in the majority of malignant cases the curette will reveal the condition, but it does not do so in all. Again, the tissue which is selected for section may not be the proper piece, and the sections examined may not contain the disease, while there are occasions where the microscopic examination is misleading. The curette may fail altogether to remove a small polypus. After curettage, if the uterus has for any reason to be split, it is surprising to find how much tissue intended to be removed has not been. In a case lately explored a condition existed which, had the endometrium not been digitally examined, would have been entirely missed. A sessile fold of mucous membrane was found attached to the fundus, and its removal necessitated the use of forceps. The microscopic structure of a sample of the tissue removed represented that of a glandular hypertrophic endometritis. Polypi of a more muscular or fibrous structure will escape notice even more readily. It is a notable fact that even comparatively large tumours can be overlooked during an ordinary bimanual examination.

Dysmenorrhœa, from whatever cause, requires to be considered in this connection. That dilatation of some sort is indicated in the treatment of this condition will be generally admitted; but that it indicates such a serious dilatation as to enable the finger to be inserted, will be questioned. I think that a perfunctory dilatation, even though it has been lately to some extent championed by Herman,¹ seldom cures dysmenorrhœa. Though pregnancy does not infallibly remove this pain, still the greatest number of cures follows it; and, during pregnancy and delivery, the entire uterus is very thoroughly dilated. If, then, the extensive dilatation required to admit the finger into the uterus can be carried out without great risk, it ought to be done, for not only does it ensure a thorough dilatation, but it permits the diagnosis of certain etiological features—notably, small submucous myomata which are situated in the lower uterine segment.

It is unnecessary to allude to dilatation of the cervix as a step to further treatment, but this is a most important point.

¹ Herman, "A Clinical Lecture on Dysmenorrhœa," *British Medical Journal*, 1902, vol. i, p. 1193.

Intra-uterine medicaments can be thoroughly applied; polypi, submucous or intramural tumours removed, &c., &c.

2. *Contraindications*.—By a careful examination before dilatation, extra-uterine pregnancy, salpingitis, perimetritis, cellulitis, &c., should be definitely excluded.

3. *Technique*.—That described by Falk,¹ which is the routine method in Schultze's clinique at Jena, is so detailed that I may be allowed to describe it *in extenso*.

"The pubes is shaved. The vagina is thoroughly douched with 1 per cent lysol solution. All instruments to be employed are boiled for fifteen minutes in soda solution. The vaginal mucous membrane is finally swabbed with gauze and 1 in 1,000 corrosive solution. A detailed vaginal examination, including sounding of the uterus, having been made, the cervix is caught with tenaculum forceps. With conical graduated bougies, the full capacity of the cervical canal is ascertained. The tenaculum is removed, and, if no hæmorrhage follow, the patient is returned to bed. The temperature is taken every three hours to see how the endometrium reacts in relationship to the parametrium. Should hæmorrhage ensue, the vagina is plugged, and the patient allowed to rest for twenty-four hours. If during the next twenty-four hours, there be neither hæmorrhage nor pain, the further manipulation is proceeded with. The douching, &c., is repeated, and, with the patient in the genupectoral position, the first laminaria tent is introduced without touching either the external genitals or the vaginal walls. These tents are prepared as follows:—(1) A superficial layer is removed by scraping with glass; (2) they are boiled for two minutes; (3) they are next placed in a solution composed of 95 per cent carbolic acid and 5 per cent alcohol; (4) from this fluid the tents are removed when required, placed in boiling water till flexible, and then boiled for two minutes; (5) in sterilised gauze, the selected tent is bent to the required angle, placed in cold 1 in 1,000 corrosive solution, and is then ready for insertion into the cervical canal. After the insertion of the tent, the patient is kept quietly in bed. The temperature is taken every three hours, and, if it rise one degree, the vaginal tampon and the tent are removed, and the vagina and the uterus are douched. The pain from the swelling of the tent is usually borne without complaint. The tent is removed in twenty-four hours, and the vagina and uterus douched. The cervix is caught with forceps, and a few bougies passed as at first, then the second tent is inserted. It

¹ Falk, "Ueber die Austattung des Uterus," *Zeitschrift für praktische Aerzte*, 1898, No. 23.

may be necessary to employ a third tent, in order to get a sound having a thickness of 16 mm. to pass easily through the canal. When this has been performed the patient is left overnight, and next morning is anæsthetised. The abdomen and genitals are carefully cleansed and covered with a sterilised towel having a slit opposite the vulva. The uterus is douched, and the examination proceeded with. Treatment succeeds diagnosis. The cavity is well douched, and medicaments applied. Polypi are removed—mucous as well as myomatous. Intramural myomata may require incision of the uterine wall. Curettage may be performed. If hæmorrhage be at all severe, the cavity of the uterus is packed with gauze for forty-eight hours."

This *technique* is, perhaps, a little too interfering, and is unnecessarily prolonged. It cannot be a good plan to block the cervical canal for three days where hæmorrhage is present, and it is on account of this very symptom that such a degree of dilatation is especially necessary. Then, again, such a prolonged application of antiseptics to the vaginal mucous membrane, especially lysol, will be badly borne, at least, by private patients. The *technique* which I have employed is much simpler. A thorough cleansing of the vagina with soap and 1 in 100 carbolic solution is carried out. A vaginal douche of 1 in 100 carbolate of potash is employed twice daily for a few days previously where the case permits of such delay. The cervix is then dilated sufficiently to allow of the introduction of a tightly fitting tent, usually having a diameter of 8 to 10 mm. Before inserting the tent, the cavity of the uterus is well douched. After introducing the tent, the vagina is packed with gauze, and a quarter of a grain of morphia suppository placed in the rectum. In from sixteen to twenty-four hours, the packing and the tent are removed, the vagina and uterus douched, and the patient anæsthetised. Further dilatation with Hegar's dilators is performed if necessary. The examination with the finger is then proceeded with, and the free hand steadies and pushes down the fundus over the finger entering it through the cervix. The object of employing a tent is to avoid laceration of the cervix, which invariably takes place when rapid dilatation is employed. This occurrence complicates the operation considerably, and should be avoided. In the case of incomplete abortion, it may not be necessary to resort to the use of a tent at all. The great disadvantage of the tent is the pain which, in my experience, accompanies the stretching of the cervix. With the aid of the morphia suppository, however, it can be tolerated. The tents which

I employ are prepared, after the manner of von Bergmann's catgut, with corrosive sublimate, and are kept in alcohol and glycerine.

Dr. Munro Kerr said that the main question to decide was—When is it necessary to explore the uterus? He considered it advisable when bleeding was the chief symptom.

Dr. Samuel Sloan thought that *Dr. MacLennan's* description of the method of dilatation savoured too much of undue interference, and asked what was meant by rapid dilatation.

Dr. G. Balfour Marshall said that he considered such indiscriminate dilatation of the uterus was not justifiable. It was sufficient in the majority of cases to dilate to No. 10 or 12 Hegar, which permitted of thorough removal of tissue. There might be a few cases where a small polypus would thus be overlooked, but a return of the symptoms would point this out, and a second operation would do no harm. In cases of dysmenorrhœa, dilatation up to even No. 10 Hegar was frequently extremely difficult, and to attempt to go further would simply result in extensive laceration, which would be harmful.

Dr. A. W. Russell said that much could be urged in favour of *Dr. MacLennan's* contention for digital palpation of the endometrium, and he considered it to be absolutely necessary in cases of abortion and septic mischief in the puerperium. These were fortunately the cases in which dilatation, sufficient to admit the finger comfortably, was comparatively easy. Difficulty arose, however, when we came to deal with ordinary cases of narrow, elongated cervix with dense tissue, which could not be easily stretched to any extent by any of the usual means without tearing, however careful and patient the operator might be. There had certainly been cases of this kind, where he had wished that he could have palpated and even seen the endometrium; but he was sure that the educated hand, even through the medium of a probe or sound and the curette itself, could usually judge accurately of the condition of the uterine interior. *Dr. Russell* also considered that there was much greater risk of sepsis by the general adoption of this method, as the extreme precautions described by *Dr. MacLennan* were not likely to be always observed in practice. For these reasons he did not think that it would be possible or safe to give this method a wider application than it had already obtained.

Dr. MacLennan replied, and said, in answer to *Dr. Sloan*, that rapid dilatation took about half an hour in both of the

cases. In every case dilated up to near No. 24 Hegar he had found that laceration took place, but it did not necessarily cause bleeding, and the condition was only found when the finger entered the cervix. In reply to Dr. Balfour Marshall, he said that he did not mean to infer that every case of dysmenorrhœa required this procedure, but that most were the better of it; while, if carefully carried out, it did not necessitate a worse prognosis.

V.—NOTE ON TWO INTESTINAL FOREIGN BODIES—(A) INTESTINAL CONCRETIONS FROM A CASE THAT SIMULATED MALIGNANT DISEASE OF THE BOWEL; (B) A PIECE OF LINT LEFT IN THE ABDOMINAL CAVITY AT AN OPERATION, AND REMOVED LATER BY A SECOND OPERATION AFTER IT HAD FOUND ITS WAY INTO THE SMALL INTESTINE.

BY DR. A. W. RUSSELL.

A. Intestinal concretions, calculi, or enteroliths are frequently reported. The three concretions which I show to-night are evidently "oatstones," or avenoliths, and are chiefly interesting because they were mistaken for malignant growths, and the opinion was even given by a surgeon, after examination under chloroform, that the condition was too far advanced for operation. About six months ago, and several weeks after her examination under chloroform, these concretions, which are almost cubical in shape, and measure from 1 to $1\frac{1}{2}$ inch across, were, after some days of very severe pain, passed *per rectum*. Although one or two can still be felt through the abdominal wall, the severe attacks of pain and diarrhœa from which she had suffered and lost health for many months disappeared, and she now enjoys better health than she has had for years, and is again able for ordinary household duties.

B. This piece of lint, gathered up into the shape and about the size of a hen's egg, as you see it, was removed by abdominal section some time ago from the small intestine of a woman upon whom I had five months previously operated for the relief of persistent and severe dysmenorrhœa, which had defied other means of treatment. During the operation—which was the usual one of double oöphorectomy—a lint guard was placed over the bowel inside the wound until complete anæsthesia was obtained. This was necessary, as the abdominal wall was exceptionally thick, while the left ovary lay unusually

deep, and the difficulty in getting it up was increased temporarily by imperfect anæsthesia. During the subsequent stages we all had in mind the fact of using the lint, and were certain it had not been left in the abdomen. The patient made an uninterrupted recovery, and a fortnight afterwards had been measured for the usual abdominal belt, when she began to feel some pain in the left side, and in the course of a few days the leg began to swell. This swelling increased, and extended to the right leg in less degree, so we came to the conclusion that thrombosis had occurred. The swelling gradually subsided, and the patient being considered convalescent, was able to go to the coast two months after the operation. She was subject, however, to acute attacks of cramp-like pains in the abdomen, and the swelling of the legs, especially the left, never quite disappeared, and was readily aggravated so that much exercise was not possible. After seeing her several times I decided that something required to be done to relieve her of pain, as I believed the intense intestinal spasm was due to adhesions. The abdomen was again opened, Dr. Dalziel kindly co-operating with me. Adhesions of omentum to abdominal wall and to the intestines were separated, when spasmodic contraction was observed at one part of the small intestine, and immediately above it a small mass which slightly distended the bowel. An incision was made, with the usual precautions, and the piece of lint which I have shown was removed.

The patient made a good recovery, and her health was gradually restored. The pelvic pain for which the original operation was performed never returned.

REVIEWS.

Clinical Pathology of the Blood: A Treatise on the General Principles and Special Applications of Hematology. By JAMES EWING, A.M., M.D. London: Henry Kimpton. 1901.

THE examination of the blood in various diseased conditions has been engaging the attention of clinicians as well as pathologists for a considerable number of years past. Much has been written on the subject, and many interesting

observations have been put on record. So that the time seems most opportune for such a work as this of Dr. Ewing's, whose aim is to present to its readers the result of an exhaustive examination of the literature of the pathology of the blood and of the blood-forming organs, and "to associate changes in the blood as closely as possible with lesions in the viscera, without which combination the former are very often unintelligible."

If one has any fault to find with the work, it would be that it is too much of a compilation, too much made up of a series of observations and opinions of various authors, and too little occupied with the presenting to its readers in a clear and connected manner the main facts of the subject under consideration. It is difficult to read, it digresses too readily into side issues, so much so that one readily loses the central theme of discussion. Apart from this, however, the book is excellent, and full of a vast amount of useful references and suggestive information.

The general plan of the work calls for no special comment. There are a certain number of chapters dealing with the general morphology, physiology and pathology of the blood plasma and cells. Then the various forms of anæmia and leukæmia are discussed in a somewhat exhaustive manner. Several chapters are devoted to the condition of the blood in such diseases as purpura, hæmophilia, and scurvy, as well as in diseases of the viscera generally. The animal parasites of the blood are also fully described.

As to the subject-matter of the book, we have but little more to add. The author seems fair and discriminating in his estimation of the views of others, and where his own opinions are given, they are always worth careful consideration. His position in regard to pernicious anæmia is, perhaps, of special interest. He holds that "the essential lesion of the disease is a megaloblastic metaplasia of the lymphoid marrow which is invariably present, is pathognomonic of the disease, and in many respects resembles a tumour formation affecting the progenitors of the red cells." He says that when the blood contains megaloblasts and a considerable proportion of megalocytes with increased hæmoglobin, and the marrow shows this peculiar hyperplasia, then the condition should be classed as a pernicious anæmia, without regard to the immediate exciting cause. "The essential process in the disease," he says, "is a reversion of the marrow to a type of blood formation which, in some respects, resembles the embryonal, and it would seem to

make very little difference how various the exciting agents may be, whether syphilis, malaria, anchylostomiasis, or intestinal auto-intoxication, provided they all initiate the same process, and stamp the anæmia with certain self-perpetuating tendencies not seen in other conditions."

The book is excellently illustrated, there being, in addition to other illustrations, fourteen coloured plates, which add greatly to the elucidation of the text. It is also well printed and bound, and, taken as a whole, it must rank as one of the most important works on the blood that has appeared in recent years.

Diseases of the Intestines. By WM. J. BOAS. Authorised Translation from the First German Edition, with Special Additions, by SEYMOUR BASCH, M.D. With Forty-seven Illustrations. London: Henry Kimpton. 1901.

OF intestinal diseases, only a fraction can be regarded as medical; and, while it may be said that as years go on, there is an increasing difficulty of knowing where to draw the line, a very considerable portion of the ailments in this territory are universally and ungrudgingly conceded to the surgeon, both to diagnose and to treat. The author of this work thinks differently; for, whilst admitting that surgeons have contributed most to the progress that has been made, nevertheless holds that "the indications for operative procedures in intestinal diseases is a matter which rests mainly with the medical practitioner. He should bear the responsibility for the operative interference, whilst the surgeon should be responsible for the technique." We do not see how such views can be defended, so do not stop to controvert them. At the same time we feel that we have reason to be glad that Boas has taken up this illogical and untenable position, else we should not have had the opportunity of seeing the attitude of mind of the medical man in general, and of this distinguished medical man in particular, to many diseases and conditions which are regarded in this country as purely surgical. In his preface the writer candidly admits that "as an internal practitioner he has naturally (why *naturally*, we would ask?) little sympathy with extreme radical measures, and with increasing experience, believes with conservative surgeons that we have almost reached the limits of possibility in intestinal surgery." This conservatism may be objected to, but it is immaterial whether our sympathies are progressive

or otherwise, for we recognise in the writings of Boas the firm convictions of a careful, trustworthy, and honest observer, and we are grateful to Dr. Basch for giving us the work of a master in our mother-tongue.

After two introductory chapters dealing with the anatomy, histology, physiology, and physiological chemistry of the intestines, the author devotes several chapters to a consideration of the symptoms and physical signs of, and the various therapeutic measures used in, intestinal disease. Then comes a detailed account of the pathology, symptomatology, diagnosis, and treatment (short of surgical technique) of all the ills that may be met with in the intestinal tract from the pylorus to the anus. In this special division of the work the descriptions are remarkably clear and concise, and the paragraphs on differential diagnosis are carefully and thoughtfully written, and should prove a veritable mine of wealth, and a true support in time of doubt and trouble, to the general practitioner, for whose requirements the work is more especially intended. Of great interest is the exhaustive treatment of habitual constipation, acute and chronic intestinal catarrh, ulcers of the intestine, and ulcer of the duodenum. The abuse of purgatives is strongly animadverted on, and the importance given to dietetics in the treatment of intestinal diseases is quite a feature of the book, and the information on this subject that the author has tabulated in Chapter VIII is arranged in a readily accessible and assimilable form, and should be most useful. At considerable length the author discusses the examination of the fæces, and describes macroscopical, microscopical, and chemical appearances and methods. Twenty-seven pages are devoted to the chemical and microscopical examination of this excretion. These methods, on the whole, seem to us most unproductive in results, and not at all comparable to similar methods of inquiry directed to urine and sputum, as the writer would have us to believe. To the statement that "most physicians cannot accustom themselves to the analysis of the intestinal dejecta," we cannot subscribe. Glasgow's physicians are otherwise than Boas states, though we are forcibly reminded of a certain academic physiologist, who prefaced a dissertation on defæcation with "This, gentlemen, is not a *nice* subject." Boas was the first to show that, besides bile, pancreatic, and very probably, too, intestinal secretion, pass into the stomach in cases of stenosis below the duodenum; and the diagnostic value of the examination of the stomach-contents in cases of poorly defined abdominal

tumours, deeply seated duodenal stenosis, duodenal ulcer, and jejunal stenosis, is strongly insisted on. We are interested to find that Boas "regards the whole question of the so-called high enemata as being, in many respects, an illusion, the rectal tube being generally arrested in the sigmoid flexure," and agree with him that extensive lavage of the upper portions of the intestines may be managed with the tube in the rectum, provided the patient is placed in a proper position. We are, however, more than sceptical about his recommendation to employ, in intestinal obstruction from gall-stones, injections of chloroform water (10 in 1,000), in order to dissolve small fragments of these concretions.

Brief notes have been added by the translator throughout the book, and some additions have been made. The most interesting of these additions, which considerably enhance the value of the work, is a brief *résumé* of the American views on appendicitis, as gathered from literature and personal experience. These views, both as regards treatment and the gravity of the disease, we need hardly say, are decidedly antidotal to the opinions expressed by Boas, and should, we think, meet with favour from the most heroic and radical of operators.

Diseases of the Stomach. By JOHN C. HEMMETER, M.D.,
Philos.D. Second Edition. London: Henry Kimpton.
1901.

THIS new edition of Professor Hemmeter's exhaustive treatise on *Diseases of the Stomach* differs so considerably from the first edition that it might almost be regarded as a new book. The preface tells us that about two-thirds have been reconstructed, and that a large amount of new material has been added. And there is no doubt that, as we have it now, this volume of 900 pages is a monument of information and learning in regard to gastric disorders.

We cannot, however, be quite so certain that the author's aim, as laid down in the preface to the first edition, namely, to fit the practitioner "to treat this very difficult class of diseases rationally and successfully," has been so successfully carried out. He tells us that his "chief effort has been to furnish the general practitioner with a work from which he can readily acquaint himself with all that has been done in this important branch of medicine." Certainly the book contains an account of "all that has been done" in regard to

diseases of the stomach, but there is, in our opinion, too much of this, at least for the general practitioner and general reader. The views of so many other authorities have been so fully quoted that one tends to lose trace of the personality of Dr. Hemmeter, and sometimes one is not quite certain what his views really are, or what views he would have you accept. The book is doubtless a mine of information, but its arrangement is such that one feels it to be rather a compilation than the work of a strong mind giving out its theme in a simple and forcible manner.

This, however, if a fault, is one of form and not of matter. For the author's attitude to his subject is that of the philosopher and scientific observer. Each morbid process is considered in the light of its physiology and pathology, and its treatment is argued out in the same thorough manner.

The book is divided into three parts. The first, of some 200 pages, deals with the anatomy and physiology of the digestive organs and the methods and technics of diagnosis. The second part, making up another 200 pages, has to do with the therapeutics and *materia medica* of diseases of the stomach. Here we have also a full account of the principles of dietetics both in health and disease. The third part of the book is devoted to a description of the various diseases of the stomach, their etiology, pathology, symptomatology, and treatment.

The work is amply illustrated, it is well printed and bound, and it cannot but remain a most important addition to our medical literature.

The Theory and Practice of Medicine. By HENRY WALTER SYERS, M.A., M.D. In Two Volumes. Vol. II. London: Rebman, Limited. 1902.

THE first volume of this book was reviewed in our January issue, and the opinion we then formed from reading vol. i has been in no way altered, now that we have the completed work before us. There remains, therefore, little more for us to say, for, in general arrangement and manner of treatment, this second volume is essentially a continuation of the first. It will be understood, then, that the division of the book into two is merely a matter of bookbinding, and indicates no special division in the subject matter.

The subjects dealt with in this volume are—"Diseases of the Spleen and Blood," "General Diseases," "Diseases of the

Nervous System," "Diseases of the Skin," and "Treatment in General." Of these the chapter on diseases of the blood is to us incomplete and unsatisfactory; and, indeed, the author seems quite to ignore or discredit the more recent work that has been done in this department of medicine. We have, for instance (page 13), when discussing the morbid anatomy of pernicious anæmia, the following statement:—"Changes have been observed in the bone marrow, which is sometimes described as being morbidly red, and on microscopic examination may be found to contain large numbers of lymphoid cells and of nucleated red corpuscles." Now, it is well known to pathologists that these are not the characteristic microscopic appearances of the bone marrow in pernicious anæmia, and to suggest that they are shows a false conception of the nature of this disease. The confusion, too, between lymphatic leukæmia and Hodgkin's disease is considerable, and the description given of the one is almost a counterpart given of the other. We are told (page 26) that in Hodgkin's disease we may have infiltration of lymphocytes into the liver, spleen, stomach, and intestines, and (page 25) that the white corpuscles in the blood may be considerably increased in numbers. Such a condition is evidently not Hodgkin's disease, but lymphatic leukæmia, though no information is given as to whether the increase in the white corpuscles is an ordinary leucocytosis or a lymphocytosis.

In the chapter on diseases of the nervous system the account of myelitis is incomplete, and the symptoms given are not those of a typical case of transverse myelitis. We are told, on page 229, that "the muscles of the paralysed limbs rapidly waste, especially when the disease is in the lumbar region of the cord. When thus situated, myelitis leads not only to wasting and flaccidity of muscles, but also to the development of changes in their electrical reaction. . . . This is not the case when the disease is situated at a higher level. Under these circumstances there may be slight quantitative changes, but the reaction of degeneration does not usually appear." This, of course, is quite incorrect, for rapid wasting will be found in any muscles whose trophic centres are involved by the myelitis, even if the lesion be high up in the cord. If the myelitis involve the lower cervical segments, there will be marked wasting in the muscles of the fore-arm, just as we have in the leg when the lumbo-sacral region is the seat of the lesion.

Examples such as the above are not uncommon; and, we would hope, that if, at any time in the future, Dr. Syers

should publish a second edition of this book, that it will be one which has been "revised throughout and in part rewritten."

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M.D. Second Edition, revised. With 103 Illustrations, many of them in Colours. London: W. B. Saunders & Co. 1901.

THE present edition has been thoroughly revised. Many parts have been rewritten, and new matter has been introduced. The work is elementary in its scope, but it strikes us as well written, and the illustrations, both borrowed and original, are, as a whole, excellent.

The Medical Annual: A Year-book of Treatment and Practitioner's Index, 1902. Bristol: John Wright & Co.

THIS excellent production has been steadily growing in usefulness for the last twenty years, and we heartily concede it well deserves its continued success.

The aim of furnishing a ready reference has been carefully sustained throughout this volume.

The wide range of diverse subjects are treated by well known authorities, in a compact, racy, scientific, and up-to-date style. The illustrations and coloured plates have greatly enhanced the value of the book, which is well got up, and reflects credit on the publishers. We have nothing but praise for this most handy book, and we venture to say it will be found on the consulting-room desk of many busy practitioners, both at home and abroad.

The Life of Saint Luke. By EDWARD CLAPTON, M.D., F.R.C.P. London: J. & A. Churchill. 1902.

THERE is no preface to tell us why this book was written, but it gives us, as its title implies, an account of St. Luke's life, and, in addition, a good deal of information on matters more or less distantly related to the immediate subject. Luke is identified with Antipas, "my faithful martyr" (R.V., "my witness, my faithful one") of *Revelation*, and it is supposed that he was so named at birth in honour of Herod Antipas,

who had done a great deal to benefit Luke's native place, Antioch in Syria. Antioch, according to Josephus, was the third city of the Roman Empire, and among its fine buildings was a university, which included a medical school. After studying medicine, classics, and religion at Antioch, Luke probably removed to Jerusalem about 9 A.D., when he was 24 years of age. Later on, when revisiting his old school, he may have met with Aretaeus. When in Greece, he may have visited Epidaurus, with its Temple of Æsculapius, its school of medicine, and its hospital for 120 in-door patients. Luke is supposed to have perished at Pergamos, the city with the second largest library in the world (200,000 volumes), and containing the famous Temple of Æsculapius, with its caste of medical priests, who were bound by oath not to divulge the secrets of their profession. His career, as described in the present little volume, furnishes instructive and interesting reading for a leisure hour, and we gladly commend the book to our readers.

"First Aid" to the Injured and Sick: An Ambulance Handbook. By F. L. WARWICK and A. C. TUNSTALL. Bristol: John Wright & Co. 1901.

IN reviewing the first edition of this work, in the *Journal* for April, 1901, we predicted "success for a book so eminently practical, and, at the same time, so readable." That our prediction was well founded is shown by the fact that, originally issued in January, 1901, the *Handbook* was reprinted in May of the same year. This fact is worth more than any number of favourable notices or reviews, but while in this respect the book presents a similarity with popular novels "of the hour," it differs in that its life is unlikely to be ephemeral.

Baldness and Greyness: Their Etiology, Pathology, and Treatment. By TOM ROBINSON, M.D. Fourth Edition. London: Henry Kimpton. 1902.

WITHIN the compass of one hundred and twenty-five pages, the author discusses the anatomy, physiology, colour and texture, and, finally, the diseases of the hair and their treatment. Much that is both curious and quaint about the hair may here be found, but for the practical physician there is

nothing in this little work that cannot be read with more profit and pleasure elsewhere. The matter is carelessly written and arranged, and orthographical and other errors abound, almost equalling in number half the pages in the book. Such a plethora of mis-spellings, mal-punctuations, &c., &c., seems well-nigh incredible, and is certainly altogether unpardonable in the *fourth edition* of any work.

Hare-Lip and Cleft Palate. By R. W. MURRAY, F.R.C.S.
London: J. & A. Churchill. 1902.

THIS small book on hare-lip and cleft palate gives an interesting account of the writer's practice in dealing with these deformities. Although there is nothing specially new in the book, it contains many practical hints, the outcome of a pretty considerable experience, which cannot but prove useful and interesting to those who have to undertake the treatment of these cases.

There are some good photographs illustrating the various deformities, and showing some highly satisfactory results of treatment.

The Four Epochs of Woman's Life. By ANNA M. GALBRAITH, M.D. With an Introductory Note by JOHN H. MUSSER, M.D. London: W. B. Saunders & Co. 1901.

AFTER a short and suggestive introduction on education as a controlling factor in the physical life of woman, the authoress discusses briefly and in simple language the "four epochs of woman's life." These are maidenhood, marriage, maternity, and the menopause.

The section on maidenhood is well written, and should be helpful to mothers. We should like, however, to draw the attention of the authoress to a slip of the pen in the chapter on the anatomy of the female generative organs. This is the statement that the Fallopian tubes are *two* inches in length. In the second section, continence is rightly advocated, but it is surely going too far in this direction to say that married people should, in imitation of certain of the lower animals, never cohabit except directly for the purpose of procreation. The arguments regarding the results of sexual excess are somewhat exaggerated, and, therefore, proportionately weakened.

In discussing the question of marriage the authoress makes the drastic proposal that, "before a man is granted a license of marriage he should have a certificate from the health officer of freedom from syphilis, gonorrhœa, and tuberculosis."

Perhaps the best section in the book is that on maternity. The suggestions in the chapter on the management of labour are excellent. The only fault of this chapter is that it is too short. There are not many medical men, however, who would agree with the authoress in the following statement:—"Wet nurses are known tyrants, and if the quality of the milk has anything to do with the disposition of the child, as is believed to be the case, the idea is distasteful of having a woman who belongs to the lower classes provide nourishment for your child."

The fourth section, on the menopause, contains much good advice.

A short glossary of medical terms closes the work.

Obstetric and Gynecologic Nursing. By EDWARD P. DAVIS, A.M., M.D. London: W. B. Saunders & Co. 1901.

THIS work can be strongly recommended as a guide for nurses. It is clearly printed, pleasantly written, well illustrated, and reliable. Not only so, but it is also thoroughly practical and helpful. Theories regarding the mechanism of labour are excluded, and so space is gained for really useful details.

Of the 400 pages of which the book consists, 240 are devoted to obstetrics, 122 to gynæcology, and the remainder to an appendix containing much useful information regarding dietary and the preparation of surgical supplies.

A specially commendable feature of the work is the care which the author takes in describing even the most minute details of the best methods by which asepsis may be obtained. There are also many useful hints, such as the following:—"She should never speak of possible complications, or of severe cases which she has seen, nor of operations at which she has assisted, or of remarkable recoveries from dangerous illnesses." Good advice this, which it would be well for every nurse to bear in mind.

There is one statement, however, to which most gynæcologists would take exception. This is the author's restriction of the domain of gynæcology to "those conditions of ill health in women in which the pelvic organs are concerned, but in which

disease does not arise from pregnancy, parturition, or the puerperal state." If these were to be excluded, the field of gynæcology would be indeed, as the author owns, "a narrow one."

A Manual of Obstetrics. By A. F. A. KING, A.M., M.D. Eighth Edition, revised and enlarged. With 264 Illustrations. London: Henry Kimpton. 1901.

A TEXT-BOOK which has survived twenty years, and has reached its eighth edition, has evidently supplied a want. The one under review retains very little of its original appearance. In the second edition there were 338 pages and 59 illustrations; in the present edition there are 612 pages and 264 illustrations. The text has been revised and added to considerably. There are a few statements, however, which must have escaped the attention of the author, such as—"All instruments to be *sterilised* (?) by immersion in boiling water or in 5 per cent solution of carbolic acid" (p. 175), and "when the ovule is about to be discharged from the ovisac, the fimbriæ of the tube grasp the ovary" (p. 54). The term "quickening," also, is used as if it were synonymous with foetal movements.

The work can be recommended to students as an elementary and well-written manual of obstetrics. It is, in the main, reliable, and is well abreast of modern advances. Specially commendable features are the chapter on obstetric jurisprudence at the end of the volume, and the description of the various modern methods of abdominal palpation during pregnancy and labour.

There are very few misprints. "Recurrence," on p. 521, should be "occurrence"; "medullay," p. 79, should be "medullary"; and "unproperly," p. 244, should be "improperly."

Modern Obstetrics, General and Operative. By W. A. NEWMAN DORLAND, A.M., M.D. With 201 Illustration. Second Edition, revised and enlarged. London: W. B. Saunders & Co. 1901.

THIS is a large book of 800 pages, but, unfortunately, it shows every sign of being merely a compilation. The author's practical experience is evidently limited, while, on the other hand, the work bristles with references to authorities of all

grades of importance. One cannot but admire the industry of the author, but with an extended experience we hope that he will be more discriminate in his selection of quotations. He is very fond of the habit of prefixing proper names to things. For instance, in the section on the diagnosis of pregnancy, he mentions Mayor's sign, Kennedy's sign, Hicks's sign, Goodell's sign, Ahlfeld's sign, Jacquemin's sign, Rasch's sign, Osiander's sign, &c. Pity the poor student if he were compelled to learn according to this mode of nomenclature!

On p. 43, the terms *primipara* and *primigravida* are said to be synonymous; on p. 47, the polar globules are described as becoming extruded *after* impregnation; on p. 565, the ischial tuberosities are declared to be *separated* in the malacosteon pelvis; and, on p. 622, inversion of the uterus is stated to occur sometimes at the end of the *first* stage of labour. Inaccuracies such as these are unpardonable.

The publishers are to be congratulated for the excellence of the type and of the illustrations.

An International System of Electro-Therapeutics for Students, General Practitioners, and Specialists. By numerous associated Authors, edited by HORATIO R. BIGELOW, M.D. Second Edition, thoroughly revised and brought up to the present date, with several entirely New Departments embodying the most recent Developments of the Science, edited by G. BETTON MASSEY, M.D. London: Henry Kimpton. 1902.

ALTHOUGH this book bears a London imprint, it is thoroughly American in conception, authorship, and typography. Of the thirty-nine authors contributing to the work, twenty-nine reside in the United States, two are Canadians, four are French, and two are English.

The boast so prominently put forward in the title, that the work is brought well up to date, is poorly substantiated, as will be gathered from the fact that there is no mention whatsoever of the treatment associated with the name of Dr. Finsen, of Copenhagen, and that the following paragraph contains all that Dr. Stern can say on the therapeutic uses of the Röntgen rays:—

"For therapeutic uses *x*-rays have been applied to a large number of diseases; by this, of course, is not meant that visual

observation of an injury or disease where the light is used as a diagnostic aid, but where the rays are directly applied as a remedial agent. It is regrettable that the observations thus far recorded have not been, except in very few instances, verified by wider experience, or in the hands of other observers. Hence, this agent, this dangerous agent, will not be recommended at present, except for a single disease, and that is lupus."

We turn with some interest to the section on the electrical treatment of fibroid tumours of the uterus, for we remember the "boom" of the Apostoli treatment, and we observe that the writers of the article in this work—Drs. Grand and Famarque—are assistants in Dr. Apostoli's clinique. We gather from their somewhat confused (and certainly badly translated) article that what is now claimed for this mode of treatment is the relief of symptoms, not the disappearance of the tumour. "If," they say, "notwithstanding the employment of high intensities, brought into honor by Dr. Apostoli, it yet happens but too often that the electric current remains powerless to cause the disappearance of fibroids, or even to notably diminish their volume, it is not so of their *symptomatic cure*; in the great majority of cases which present themselves in practice the cure is almost assured and permanent, providing the treatment is applied as it should be."

In regard to the work as a whole, we may say that the articles which compose it are of very varying degrees of merit, but all agree in giving an exaggerated importance to electrical treatment, and in the very easy acceptance of very doubtful results.

Excess of Salt in the Diet, with Three other Factors, the probable Cause of Cancer. By JAMES BRAITHWAITE, M.D. London: J. & A. Churchill. 1902.

THE three other factors mentioned are meat diet, an effete or senile condition of the epithelial cells, and local irritation; and the writer contends that in the presence of one or more of these conditions the taking of much salt will produce cancer. It is asserted that in cancer districts, at home or abroad, salt abounds in the diet, and other evidence to prove the contention is adduced, but is not very convincing, and we do not think that the publication of this pamphlet will lead to any reduction in the consumption of salt.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

BY DR. R. S. STEWART.

Etiology of Paresis.—By Hurd (*American Journal of Insanity*, April, 1902).—It seems, says this writer, justifiable to conclude, in the present state of our knowledge, that syphilis is the most common factor in the production of paresis; that it may cause it directly, forming an exciting cause; or that it may cause it indirectly by bringing about such a devitalisation of the system generally as to render other influences operative, forming in this way a predisposing cause. It is not usually the sole cause, but there is associated with it the deleterious effect of mental stress and over-excitement, dissipation and alcoholism, and heredity. In a certain relatively small number of cases, mental stress, worry, or overwork may be the sole ascertainable cause, and in a still smaller proportion of cases traumatism may be the cause; but in many of them this acts as a developing or ripening agent of an incipient paresis in a syphilitic subject.

Comparative Frequency of General Paralysis. By Wagner (*American Journal of Insanity*, April, 1902).—From a statistical survey of this affection, it is concluded that it forms about 8·75 per cent of all cases of insanity. The disease occurs most frequently between the ages of 30 and 50, and is gradually increasing in frequency at the present time; it affects men seven times more frequently than women, and is invariably fatal in its termination, and usually so in less than two and a half years. It is nearly twice as frequent in large cities as in the country, and heredity, syphilitic infection, and alcoholic indulgence are important factors in its production. Neither the members of the learned professions appear to be especially susceptible, nor does intellectual work or any other special kind of occupation seem to predispose the individual to paresis; but general cerebral strain, with more or less hereditary influence, is found to exist in the majority of cases. Overwork, sexual excesses, alcoholism, irregular habits of sleeping and eating, and such accidents as sunstroke and cerebral traumatism, appear to be the great factors in the production of the disease. Whatever be the case on the American continent, there can be no doubt, it may be noted, that this disease is not only not increasing, but is actually diminishing in the British Isles within the past ten years.

Elimination of Indican, Acetone, and Diacetic Acid in various Psychoses. By Coriat (*American Journal of Insanity*, April, 1902).—Excessive elimination of indican occurs in that class of cases in which the most important symptom is akinesia. In this are included katatonic or epileptic stupor, alcoholic depression, demented and bedridden cases of general paralysis, the depressive phases of maniacal-depressive psychosis, inactive cases of dementia præcox and involution melancholia without agitation. Nothing was found to support the theory that this akinetic condition was due to intestinal auto-intoxication, of which the excessive indican elimination is merely an index. The significance of the striking parallelism between excessive indican elimination and various akinetic disorders, entirely independent of the form of mental disorder, cannot, the writer thinks, be

exactly determined at present. On the other hand, diminished indican excretion is a feature of that class of cases presenting symptoms of hyperkinesis, cases characterised by excitement, agitation, exhilaration, or hyperactivity. With but few exceptions, the appearance of acetone and diacetic acid occurs only in those cases in which there is some loss of body weight; and, having this inanition process in mind, the writer is of opinion that auto-intoxication as a factor in producing akinetic conditions, manifested clinically by the appearance of these two bodies in the urine, can be definitely ruled out.

Homomorphous General Paralysis in Twins. By Keraval and Raviart (*Archives de Neurologie*, May, 1902).—The case here recorded is that of twin brothers, without known hereditary or personal antecedents, married, and consequently living apart, who became affected, at an interval of eight years—the one at 39, the other at 47 years of age—with progressive general paralysis of the melancholic type, with delusions of negation. In the first, death occurred at the end of eight months; in the second, after three years. The most interesting features of these cases are the appearance of the same affection in the two brothers without apparent cause, and that the type of the disease was so rigorously identical in the two cases, the same deluded ideas of negation being expressed in the same fashion and in the same phrases. There can be here no question of induced insanity, seeing that the brothers did not live together, and that a very considerable interval of time elapsed between the appearance of the disease in the one and the other.

Double Facial Paralysis of Peripheral Origin. By Diaz-Delgado (*Archives de Neurologie*, May, 1902).—A man of 62 had a sudden attack of slight peripheral paralysis, in which the reaction of degeneration was absent, and which disappeared after eight applications of electrical treatment. Three years after a similarly sudden attack occurred, but on the other side, and presenting symptoms of greater severity, including the reaction of degeneration and trophic troubles. Electrical treatment was again being productive of benefit. The explanation of the differing severity in the two attacks is held to be that in the first seizure the nerve was affected after its passage through the osseous canal, while in the latter the inflammatory swelling occurred in this canal, and caused comparatively greater nerve disturbance.

The Nerve Centres of Epileptics. By Abglade (*Archives de Neurologie*, May, 1902).—It is asserted by this observer that the nerve-cells, and, in particular, the pyramidal cells of the cerebral cortex, are found to be intact in cases of essential epilepsy; but that, on the contrary, the neuroglia is never normal either in its proportions or its characters. These neuroglia lesions extend often in plaques, are particularly common in the neighbourhood of the cornu ammonis, and the sclerosis is found to invade the pons and medulla, and to extend even into the spinal cord.

Double Abscess of the Right Frontal Lobe. By Dupré and Heitz (*Archives de Neurologie*, May, 1902).—During convalescence from influenza in the case of a woman of 54, slight change of character with some affection of memory and mental confusion supervened. A month after the condition was one of melancholia, with confusion, amnesia, occipital headache, irregular fever, increasing prostration, degradation of habits, and bed-sores. Slight paresis was observed a few days before death. Two independent abscesses about the size of nuts were found in the white substance of the right frontal lobe above and to the outside of the corpus striatum, and encroaching behind on the anterior part of the projection zone of the ascending frontal.

Thomsen's Disease. By Ballet (*Le Progrès Médical*, 12th July, 1902).—This article consists of a graphic and very interesting clinical record of a case occurring in a man of 26, followed by a discussion as to the various views

held regarding the nature of the disease. Thomsen himself regarded it as a psychosis—"a tonic spasm in the muscles on voluntary contraction, the consequence of a hereditary psychical disposition." He had been struck by the mental anomalies occurring in his own family. But his view has been contradicted by facts. Other observers have asked if it is not a case of an affection of the pons or medulla. Marie and Ballet pronounced in favour of the purely muscular nature of the trouble in 1883, and this opinion has been shared by Bernhardt, Strümpell, and Erb. Thomsen's disease is not a disease of the nervous system. Déjérine and Sottas, in a case followed by autopsy, found no nervous lesion. On the other hand, Nearonoff determined the persistence of myotony during chloroform sleep, which excludes the participation of the brain or cord in myotony. Babes and Marinesco have noted the alterations of the terminal muscle-plates; but this requires confirmation, and the condition may possibly be secondary. On the contrary, in most of the cases examined, muscular lesions have been found, and these have always been the same. Whereas in a transverse section of a healthy muscle one finds in a given field 10 or 12 muscular fibres, in the case of a myotonic muscle only 4 or 6 appear. There is therefore a considerable hypertrophy of the fibres. Further, the form of these is altered; they have lost their polygonal contour, and taken on a rounded outline. A further and most important point is the very great increase in the number of the nuclei as compared with the normal; sometimes the internal surface of the sarcolemma is studded with these, and often the protoplasm which surrounds these is so increased as to join on to that of neighbouring nuclei, so that the fibre appears surrounded by areas of protoplasm. The significance of these nuclei and their surrounding protoplasm lies in the fact that they indicate a survival of, or a tendency to, the embryonal condition of the muscular fibre. The writer admits that this explanation cannot be received without reserve, for in some cases these lesions were not present. The occurrence, too, of remissions and improvements is not easily explainable if the condition is regarded as one of a fixed pathological nature, and the explanation is hazarded that the trouble may be one of chemical constitution. Eulenburg has made the remark that the curve given by the myotonic muscle resembles that of the fatigued muscle; and Herman, Ringer, and Sainsbury have shown that fatigue, cold, and the injection of phosphate of soda determine in the frog troubles of contraction analogous to those found in Thomsen's disease. If the trouble is one of nutrition, its nature is so far problematical, and further research is necessary, particularly as to the occurrence of ptomaines in the urine.

SURGERY.

By ARCH. YOUNG, B.Sc., M.B., C.M.

Syphilis of the Bladder.—Michel de Margouliès (Chef du service de maladies génito-urinaires de l'hôpital d'Odessa) contributes to the April issue of the *Annales des Maladies des Organes Génito-urinaires* (Guyon and Lancereaux) an original memoir of considerable interest on this subject.

After a comprehensive survey of all the most important and reliable references to syphilitic affections of the bladder in continental, British, and American literature, he gives, in careful and concise form, the salient features and symptoms of three cases coming under his own care, which, after consideration of the whole facts, he believes to have been examples of syphilitic affection of the bladder.

Case I was that of a woman, æt. 41, who, in June, 1900, presented herself in l'hôpital Israël d'Odessa, complaining of considerable hæmaturia and pain in the left half of the abdomen and in the left hypochondrium.

Case II was that of a man, æt. 35, seen in the same clinic, in January, 1901,

his complaint being of agonising pains in the bladder region, especially in the deep portion of the cavity, and of frequent desire to urinate. The pains were so severe that the patient could not rest in one position for more than a moment, and every means of treatment had been tried without avail.

Case III, that of a man, 55 years of age, who came under the author's observation in April, 1901, complaining of hæmaturia and œdema of the lower limbs. It is impossible to give the details of the three cases in full, but the following are what the author himself puts forward in a brief *résumé* as warranting, in his opinion, the relegation of the affection to the so far ill-recognised class of syphilitic manifestations of the bladder.

"In Case I, the history gave no clue. There was increase in size of the inguinal lymphatic glands, and symmetrical cicatrices on the legs. General health perfect. Symptoms of great suffering; violent hæmaturia, becoming constant in the advanced stages, and frequent desire to micturate. There was nothing abnormal in the urine, except the presence of blood.

"By means of the endoscope three small nodular tumours (set close together) were discovered in the bladder, a little outside the vesical orifice of the left ureter. A prolonged course of treatment, in which every possible method was tried, was without result. Iodide of potassium, without any local treatment of any sort, completely cured the patient. The hæmaturia ceased, and endoscopic examination demonstrated the disappearance of the tumours, and in their place cicatrices.

"In Case III the patient could give no information as to whether he had had syphilis. There was visible a scar on the dorsal aspect of the penis, scars on the legs, increase in size of the lymphatic glands, and there were symptoms of *tabes dorsalis*. General health was satisfactory. As severe symptoms there were obstinate, almost constant, hæmaturia and distressing desire to pass water. Bladder capacity was clearly diminished; the urine was not remarkable—not abnormal. In a word, the patient had cystitis, but without any apparent cause. Every ordinary method of treatment was employed, without result. Mercurial frictions and iodide of potassium, without local treatment of any kind, brought complete convalescence. The endoscope showed the usual appearance of a senile bladder.

"The patient cited in Case II contracted syphilis seven years before. There was enlargement of lymphatic glands. The patient's general condition was good. He complained of frequent desire to urinate, and of intolerable pains in the abdomen. The urine was normal. The endoscope showed ulcers on the fundus of the bladder. Every possible method of treatment was tried, but gave no result. Mercurial frictions and iodide of potassium, without any kind of local treatment, accomplished the patient's cure and cicatrization of the ulcers."

Margouliès then summarises the important deductions of various authors who have observed and described syphilis of the bladder, and goes on to discuss the question as to how far the diagnoses in his cases were justified. In particular, he quotes the observations of Prokash as follows:—

"1. The manifestations of bladder syphilis are necessarily rare, but it is not less certain that syphilis affects the bladder than that it attacks other organs.

"2. Age and constitution of the patient are of little or no importance.

"3. In other forms of bladder ulceration one usually observes, simultaneously, ulceration of the urethra; in these forms the ulcers are limited.

"4. Bladder manifestations are observed in the initial as well as in the later period of syphilis.

"5. In some cases of bladder involvement only syphilitic manifestations are observed; in other cases these are accompanied, or even preceded, by the signs of other affections.

"6. The number of ulcers in cases described varies from one to a dozen; sometimes the bladder lesions are scattered. The size of the ulcers presents great variations.

"7. The lesions occur sometimes on the surface of the bladder, sometimes

in the substance of the wall, and from time to time may lead to perforation of the viscus."

Supplementing these deductions of Proksh, other authors especially dwell upon two characteristic features of most cases described, viz. :—

"1. The slight reaction of the organism, the small constitutional disturbance, in spite of the more or less grave bladder lesions.

"2. The comparatively insignificant change in composition of the urine, in spite of very long continuance of the disease."

Margouliès mentions a case published by Lereboullet in 1901, in connection with which Fournier was called in consultation—a case not of bladder disease, but of some intestinal syphilitic nature—and which he cites as presenting considerable analogy with his own cases of vesical hemorrhage.

In Lereboullet's case the outstanding symptom was obstinate intestinal hemorrhage, in a man aged 38 years, suffering from chronic diarrhœa. Treatment was without avail until Lereboullet, noticing the enlargement of patient's lymphatic glands, suspected syphilitic disease of intestine, and after persevering inquiry, obtained from the patient the admission that he had in earlier life effectively contracted syphilis. Fournier agreed with the diagnosis; anti-syphilitic treatment was begun. The effect was remarkable, patient making a complete recovery.

Fournier's views as to syphilitic affections of the internal organs are important, and are shortly these :—

"1. Syphilitic affections of the internal organs present nothing specific; this explains the frequent delay in coming to such a diagnosis. One ought, therefore, to keep always in view the possibility of a syphilitic affection of the internal organs.

"2. To recognise, with some assurance, the presence of the syphilitic factor in affections of such and such an internal organ, it is necessary—(a) that the patient has recently had some syphilitic symptoms; (b) or that there is no other proximate cause; (c) that the pathological phenomena remain *in statu quo* in spite of the employment of every other kind of treatment; (d) that there is, simultaneously, some other syphilitic symptom.

"3. The confirmation of the diagnosis is to be found in the manifest effect of anti-syphilitic treatment."

Margouliès maintains that his cases more than fulfil these somewhat exacting conditions of Fournier, and concludes by putting forward the following propositions :—

"1. In syphilis one observes ulcers of the bladder, gummata, and syphilitic cystitis.

"2. Syphilitic bladder manifestations—just as syphilitic affections of the other internal organs—are unaccompanied by special specific symptoms.

"3. To establish the diagnosis, if all the other etiological factors are put aside, it is necessary always to have in view the possibility that the symptoms, pain, &c., have the syphilitic character, especially if the previous history indicates that the patient has contracted syphilis, or, if this is impossible to establish, there are always some data present which suggest suspicions of this nature.

"4. One must suspect this relation when, with more or less grave local symptoms, there is an irreconcilable, relatively satisfactory, condition of the patient, and, equally, when the modifications in the composition of the urine are insignificant.

"5. In doubtful cases when, with a more or less prolonged lapse of time, all therapeutic means remain without avail, it is indispensable to try anti-syphilitic treatment; on these lines some marvellous cures have been effected, and clearly proved. This confirms the justice of the diagnosis.

"6. By means of the endoscope the progress of the local affection can now be regularly and easily followed, the exact image of the local lesion being actually seen. This is of great value in elucidating many obscure cases.

"7. If, in the future, we may fall into the error of mistaking for syphilitic lesions of the bladder lesions of another character, it is of no great consequence;

in the end, from the wealth of material (useful as well as useless), the essentials of a picture, strictly clinical, of syphilitic disease of the bladder, will stand out clearly, and the description of this lesion will hold its proper rank alongside of that of all other diseases of that viscus."

Leucocytosis in Appendicitis and Inflammatory Affections of the Cæcum: its importance and value in Diagnosis, Prognosis, and Treatment.—The all-absorbing and much-discussed subject of appendicitis is at present being investigated from many different points of view. One of the more recent is that concerned with the occurrence or not of a distinct leucocytosis admitting of estimation. It is found that, by systematic blood-counts, the occurrence of suppuration in such conditions can be with wonderful exactitude inferred, even in the early periods when physical signs are either quite inconsiderable or entirely wanting. It is admissible to accept so much as pretty clearly proved, and, consequently, an advance may be said to have been made all along the line; for, even although in this country few surgeons are yet prepared to go quite so far as the majority of American surgeons, and advise immediate operation in all cases, acute and chronic, irrespective of the stage, there can be only one opinion as to the absolute necessity for operation once suppuration can be definitely proved to exist, or be with adequate reason inferred to have occurred. It is obvious that suppuration, either intra-appendicular, extra-appendicular, or intra-mural, leaves no possible room for a temporising policy. It is not necessary—is, indeed, little to be recommended—that the surgeon should delay till an abscess is of such a size as to make its presence clear superficially, provided that, with reasonable certainty, the condition can be diagnosed in its earlier and more limited stage.

The bearing of leucocytosis in appendicitis and cæcal inflammations has been of late fully gone into, and, from quite a number of contributions on the subject, the papers of H. M. Joy and F. T. Wright (*Medical News*, 5th April, 1902), Curschmann (*Münch. Med. Wochenschr.*, Nos. 48 and 49, 1901), and Da Costa (*American Journal of Medical Sciences*, November, 1901) are selected for the purpose of comparison, and the general conclusions independently arrived at are thus shortly set forth:—

Curschmann's results, it may be stated, have been arrived at by systematic examination of leucocytes in blood in every case of appendicular inflammation coming under his notice for the last two and a half years.

Da Costa's results are based on an examination of 118 cases.

1. (a) Even in simple cases a moderate degree of leucocytosis may be present, while, rarely, leucocytosis may be absent in some cases of circumscribed abscess, just as in simple catarrhal and foudroyant types. The presence of 17,000 leucocytes, or less, to the cubic millimetre does not warrant the diagnosis of abscess (Da Costa).

(b) In non-purulent cases the number of leucocytes is either normal (very mild cases) or only slightly raised at the beginning of the illness, falling to normal again, after some intermittent exacerbations, in the course of a few days. Considerable increase in number of leucocytes, without formation of abscess, occurs only temporarily at the beginning of the illness; even then the number rarely exceeds 20,000 per c.mm. (Curschmann).

2. (a) If the number of leucocytes exceeds 20,000, abscess, gangrene, or general peritonitis (conjunctly or singly) is almost always indicated (Da Costa).

(b) If the number of leucocytes exceeds 20,000 permanently during the first few days, or during the course of the disease, and if other factors, such as pneumonia, &c., favouring the occurrence of leucocytosis, can be excluded, the presence of pus is certain and operation imperative. A number of 25,000, or more, found occasionally, is highly suggestive of pus. If it is found after the illness has existed for some time, the presence of pus may be assumed with certainty, and operation should be carried out without further delay (Curschmann).

(c) A high stationary or an increasing count indicates a morbid condition of

increasing severity, which demands operation no matter what the clinical symptoms may be (H. M. Joy and F. T. Wright).

3. The count indicates when operation should be performed for the best interests of the patient. Circumstances often render it desirable to postpone operation in appendicitis. Study of the blood-count enables it to be determined whether this may be done with safety, and often renders such postponement permissible.

A low stationary or decreasing count indicates that the severity of the case is abating, and that operation may be safely postponed; cases in which a falling count is accompanied by unmistakable signs of a generally bad condition form the rare exception to this second principle, and in them there is no chance of error (H. M. Joy and F. T. Wright).

4. (a) After the operative removal of the pus, the number of leucocytes is reduced to normal in the course of a few days. If this does not occur by the third or the fourth day, either retention of pus or general peritonitis, or both, exist (Da Costa).

(b) If the abscess is opened and thoroughly evacuated, the number of leucocytes falls rapidly to normal. If there is no reduction after operation, either the abscess has been incompletely evacuated, or other abscesses exist elsewhere. The same reduction results if abscesses burst spontaneously, whether into bowel, bladder, or elsewhere, provided evacuation be complete (Curschmann).

5. (a) The behaviour of the leucocytes is far more important than that of the temperature. The temperature varies considerably in these abscess formations, and may be very slight, or even absent altogether, whereas a high degree of leucocytosis is scarcely ever absent, and varies only within narrow limits (Curschmann).

6. The leucocyte count is a valuable aid to prognosis. No arbitrary set of prognostic values can be assigned to various degrees of leucocytosis. The important point is to follow any scheme in which one learns to have confidence, provided the essential principle be preserved (H. M. Joy and F. T. Wright).

7. The prognostic and diagnostic values of blood-counts are distinct (H. M. Joy and F. T. Wright).

8. In the great majority of cases simple forms of appendicitis can be, with certainty, distinguished from those complicated with abscess by leucocyte-counts. This method is specially useful when other signs, such as fluctuation, temperature, and exploratory puncture, fail (Curschmann).

This final summing up (8) indicates what the views of all the writers quoted clearly lead to, and upon the vexed question as to when operation ought to be carried out, and when it ought to, and can with safety, be delayed, it seems likely to be of some value.

The views of Joy and Wright are well summarised in *The Monthly Cyclopaedia of Pract. Medicine* (Sajous), May, 1902; those of Curschmann and Da Costa in *The Intercolonial Medical Journal of Australasia*, 20th April, 1902. From these journals the foregoing summary is in great part constructed.

The Treatment of Rotary Lateral Curvature of the Spine.

—To the *Buffalo Medical Journal*, June, 1902, Prescott Le Breton contributes a short but comprehensive memoir on this subject. He prefaces his remarks by alluding to the great frequency of this curvature, viz., 1 per cent, among growing children; and suggests that such a frequency amply warrants a thorough investigation into the etiology and pathology of the condition, with a view to improving the methods of treatment.

Before discussing the question of treatment, Le Breton devotes a few pages to some points of importance in the examination of a patient, with a view to the determination of the kind of curve present, also to the means of recording progress in a given case. The patient is stripped to the waist, the entire lumbar region exposed, and the iliac crests also. Projection of one or other hip, shoulder, scapula, any general inclination of trunk to either side (one arm swinging free, the other resting against the hip), all these points are ascertained

by simple inspection of the back in a good light. A finger tracing over spinous processes at once indicates any lateral deviation of the spine from the middle line of the body. "Rotation of the vertebræ, which inevitably causes a prominence of the ribs on one side and a sinking on the other," is best detected by making the patient bend forward from the hips, holding the spine steady. In this position rotation, even slight in degree, means a fixed curve, i.e., one in which structural changes exist.

The mobility of the different sections of the spine is next tested; a lumbar curve is regarded as flexible if it can be corrected or over-corrected; if it cannot, it is a "fixed curve." The nature of a dorsal curve is tested by steadying the pelvis and, as far as possible, the lumbar spine, while making the patient, with hands over head, bend forward, back, to right, and to left. Stiffness and very slight change in contour following these movements suggest changes in bones, ligaments, or muscles. Mobility is also tested by suspension in Sayre's apparatus. Suspension from the hands is not satisfactory on account of the attachments of the scapular muscles to the vertebral spinous processes. A final test as to the range of possible movement is to place the patient in some kind of "pressure machine." Of this Schede's and Hoffa's are the earliest forms, but Weigel's modification or that of Bradford and Brackett are considerably more useful.

Neither lateral deviation nor rotation of the spine can exist to any degree alone, experiment having proved that the spine is governed by the same laws as flat, flexible rods. Each is part of one compound movement.

Bigelow's conclusions on this point (Boylston prize essay, 1844) are quoted by Le Breton.

The author goes on further to lay stress on the importance of accurate recording of cases, by photographs, by mouldings, and by tracings. If photographs are made use of, one should be taken with the patient upright, one with the body bent forward, the former to display lateral deviation of the spinous processes, the latter to indicate rotation of the vertebræ, with distortion of the ribs.

These records ought to be taken at regular intervals from beginning of observation of case onward, so as to indicate any change, progressive or otherwise, for better or for worse.

Records should also be kept of height and weight, chest expansion, circumference of fore-arm, arm, and leg, because a marked change in all these follows gymnastic and other treatment. The length of the legs ought also to be measured, as a matter of routine, and any irregularity compensated for by altering the thickness of the soles of the shoes.

Particularly, before initiating exercises or forcible correction, the heart, lungs, and other organs should be examined in order that latent disease may not be aggravated.

As to preventive treatment, the usual considerations regarding correction of improper attitude and occupation postures are referred to. The ill-effects of corsets and articles of clothing constricting the trunk are emphasised. A strong point is made of the necessity for seeking for any existing physical asymmetry, specially as regards the legs, and several cases—including the famous case reported by Adams in 1882, of a physician, in whose back a tumour, pronounced by one of the ablest English surgeons to be a cold abscess, proved at autopsy to be the transverse processes of the lumbar vertebræ, rotated backwards on the left side—are cited to emphasise the necessity of eliminating this possible source of error.

As to *special methods of treatment*, the following five heads are in turn considered, and their special applicability to particular forms of curvature are detailed :—

1. *Recumbency and suspension* in the Sayre's apparatus.—Le Breton looks on recumbency as valuable only as an adjunct, and insists that "until a patient has become so strengthened by exercises that she can voluntarily hold her corrected position all day, she should have ten hours rest at night, and an interval of rest on the sofa after each mid-day meal. For a young child with

a rachitic curve, recumbency, manual correction, massage, and feeding form the essentials of treatment." Suspension in Sayre's apparatus may be employed once or twice daily, but, in the case of rigid curves, the force, (derived from the weight of the body) is ineffective, and direct pressure in the "pressure apparatus" is necessary to restore free passive motion.

2. *Special gymnastics*.—These must be ordered to suit each individual case. Patience and persevering continuance of exercises, even for six, nine, or twelve months, are often necessary. The exercises must be not only general, to improve the general muscular tone (Teschuer), but special, to develop special groups of muscles and promote mobility of particular parts of the spine.

3. *Support by corrective jackets*.—Plaster jackets are of service in selected cases only, e.g., in certain paralytic patients where firm support is essential. Wallstein's experiments on young dogs, in production of lateral curvature by fixing them in plaster jackets in deformed positions for months, are suggested as justifying the method employed by some orthopedists of correcting curvatures in young children by applying jackets to these in the recumbent position, the curvatures being held corrected during the hardening of the plaster.

Le Breton, however, advises, rather, the employment of corrective jackets during a portion of each day, on the principle that they act as temporary support until exercises have strengthened the muscles, and that they constantly suggest to the patient the necessity of voluntary effort to obtain the "key-note" position. They favour also adaptive changes in the bones while growth progresses.

4. *Forcible correction by the "pressure machine"*.—This is put forward as "a great aid to the surgeon at the beginning of treatment—oftentimes, indeed, an absolute necessity," just as in flat-foot, a falsely ankylosed joint, &c. A rigid and distorted spine can only be treated with any degree of hope if the resistance to passive motion is at the very outset overcome. The method of employment of the apparatus is carefully detailed by the author, and special points to be attended to are discussed. It is pointed out that, despite the apparent complexity of the apparatus, "it can be adjusted to a case in about three minutes, and the patient can be disengaged from it in a few seconds. The pressure is uncomfortable, but never needs to be painful."

5. *Electricity, massage, and general treatment*.—Daily applications of faradism to back muscles are to be given, and are to be supplemented by other means. "If the deformity is due to anterior poliomyelitis, the weakened muscles are on the convex side, and to them electricity must be applied." "Massage of the back after exercise," "sea salt rubs in the morning," "after any temporary illness rest must be ordered"—these are items in the large question of the general therapeutic measures that may be called for.

"Curvatures due to empyema, sciatica, and lesions of spinal cord must be treated according to indications." "Each patient," in conclusion, insists Le Breton, "deserves special study, and for each there must be ordered that combination in treatment best suited to the individual case."

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

Kinescopy.—This new method of testing refraction is due to Dr. Holth, of Christiania, and is fully described in the *Annales d'Oculistique* for April, 1902. It depends upon the apparent movements of an object fixed by the ametropic eye when another object is brought into the line of vision. The method as described seems in every way worthy of a trial.

New Forceps for Separating the Eyelids in Blepharospasm.

—A most ingenious new forceps for separating the eyelids in cases of blepharospasm has just been invented by Dr. Pedrazzoli, of Verona, and is made by Lûer, of Paris. It allows of the lids in such cases being opened and kept open with the surgeon's one hand, while the other is employed for the application of remedies. Such an instrument cannot fail to be of use where a practitioner has not a reliable assistant.

DOMEC has recently proposed to supply the place of an enucleated eye with an injection of paraffin. It is quite conceivable that such a proceeding would give a very good stump on which to rest an artificial eye.

Traumatic Scleral Ruptures.—Professor Panas has recently, in the *Arch. d'Ophthalm.*, written a very interesting article on traumatic scleral ruptures. He shows that such ruptures generally take place in the sclera about 2 or 3 mm. from the apparent sclero-corneal margin. The rupture is not, as is generally supposed, in the ciliary region, but in the neighbourhood of Schlemm's canal.

Such ruptures are almost invariably the result of *contre-coup*, the left eye is more frequently affected than the right, and the favourite seat of these lesions is the upper and inner aspect of the globe.

The conjunctiva does not, as a rule, tear at the same point as the sclera, but at some distance farther towards the equator, so that it generally forms a flap over the injured sclerotic which protects the wound from microbic infection. The treatment is, of course, largely the suturing of the edges of the wound together.

Treatment of Corneal Ulcers by Subconjunctival Injection

is the subject of a paper in the current number of *Knapp's Archives* by Dr. John Dunn. The number of cases in which he himself has tried the method is too small to allow of any definite conclusion; but in any case, there is no harm in trying it in severe ulceration. The injection fluid which he prefers is iodine, $\frac{1}{4}$ gr.; iodide of potassium, 15 gr.; water to 1 oz.

He has also employed a cyanide of mercury solution of the strength of 1 to 3,000.

Books, Pamphlets, &c., Received.

Medical Ethics: A Guide to Professional Conduct, by Robert Saundby, M.D. Edin. Bristol: John Wright & Co. 1902. (3s. 6d. net.)

Ligaments: Their Nature and Morphology, by J. Bland-Sutton. Third Edition. London: H. K. Lewis. 1902. (4s. 6d.)

City and County of Bristol: Annual Report of the Medical Officer of Health, 1901. Bristol: Bennett Brothers, Limited. 1902.

Report of the Yellow Fever Expedition to Pará of the Liverpool School of Tropical Medicine and Medical Parasitology, by H. E. Durham. With Illustrations and Plate. London: Longmans, Green & Co. 1902. (7s. 6d.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 23RD AUGUST, 1902.**

	WEEK ENDING				
	July 26.	Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.
Mean temperature, . . .	54·2°	55·5°	55·4°	57·2°	56·7°
Mean range of temperature between day and night, . .	17·6°	13·4°	11·6°	17·5°	15·0°
Number of days on which rain fell,	3	3	2	0	5
Amount of rainfall, . . ins.	0·43	0·08	0·07	0·0	0·63
Deaths registered, . . .	270	250	202	226	223
Death-rates,	18·1	16·8	13·5	15·2	15·0
Zymotic death-rates, . . .	1·8	1·5	1·5	2·1	1·9
Pulmonary death-rates, . .	4·7	3·1	4·0	4·4	2·9
DEATHS—					
Under 1 year,	58	54	36	36	43
60 years and upwards, . .	51	49	49	39	51
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	...	3	1	2	4
Scarlet fever,	5	2	2	1	3
Diphtheria,	2	3	...	...	1
Whooping-cough,	7	4	9	14	9
Fever, . . . . .	...	1	1	2	1
Diarrhœa,	13	9	9	11	10
Croup and laryngitis, . .	...	...	...	1	...
Bronchitis, pneumonia, and pleurisy,	54	33	29	42	30
CASES REPORTED—					
Small-pox, . . . . .	...	...	1	2	...
Diphtheria and membranous croup,	13	4	9	8	14
Erysipelas,	30	21	23	21	26
Scarlet fever,	57	30	41	42	43
Typhus fever,	2	...	...	1	...
Enteric fever,	10	5	7	8	12
Continued fever, . . . .	...	...	...	...	...
Puerperal fever,	4	4	1	1	1
Measles, *	27	22	22	30	44

* Measles is not notifiable.

SANITARY CHAMBERS,
GLASGOW, 27th August, 1902.

THE
GLASGOW MEDICAL JOURNAL.

No. IV. OCTOBER, 1902.

ORIGINAL ARTICLES.

A CLINICAL STUDY OF DIPLOPIA.

By FREELAND FERGUS, M.D.,
Surgeon to the Glasgow Eye Infirmary.

EXPERIENCE has taught me that many practitioners find difficulty in the simple operation of testing paralysis of an ocular muscle. It is hoped that the following pages, which embrace the substance of a lecture given to my ordinary class during the summer of 1902, will be of service.

By diplopia is meant double vision. A person who is the subject of it, when he looks at anything, sees two objects and not one. It is produced by the patient being conscious of the image formed on each retina separately and individually. Single vision, when both eyes are used for fixation, involves, amongst other things, that the image belonging to one eye is formed at a part of the retina symmetrical with that at which the image is situated in the other eye. Thus, if the image in each eye is found at the macula lutea, there is single vision. On the other hand, if the image of the right eye is formed at the macula, and that of the left at some part of the retina other than the macula, there will be diplopia, except in a few special cases to be afterwards mentioned. But further, in binocular fixation, a person usually observes the sensation of only the macular portion of each retina. Thus, if I hold

up one of my fingers between me and a picture on the wall, and with both eyes open look steadily at the finger, then the object on the wall appears double. It does so, however, only when attention is directed to the fact. Unless attention is so directed, the observer is not aware of it. With this form of unconscious diplopia, we have here nothing to do. The variety with which we are dealing forces itself on the patient's notice, and disturbs his vision to such an extent as to oblige him either to shut one eye or to carry his head in such a manner as to escape the diplopia.

When a patient has this affection, it is due to restriction of the movement of an eyeball in certain directions, or in one particular direction. Thus, it may be due to such mechanical restriction as might be imposed on an eyeball by the presence of an orbital tumour or abscess which did not necessarily involve any nerves; and, whenever there is diplopia, it is well thoroughly to palpate the orbit to ascertain if such a condition be present. Cases due to these causes are not, as a rule, of sudden onset, while those which are the result of muscular paralysis generally are. Further, if due to tumour or abscess situated deeply in the orbit, there is frequently a certain amount of exophthalmos.

Putting that group of cases aside, we have to deal with cases which have their origin in paralysis or paresis of one or more of the extrinsic muscles of the ball. Usually the affection is unilateral, but sometimes muscular paralysis exists on both sides. It will suffice for our present purpose to limit this simple account to cases in which the condition is unilateral.

When both images are easily perceived, it is of advantage to place a piece of blue glass in front of one eye, and a piece of red glass before the other. The best test-object is a candle flame which, under the above conditions, one eye sees of a blue colour, the other of a red. Very occasionally, even when the vision is good, the patient may at first have difficulty in seeing at one and the same time both the red and the blue images, but a little practice soon enables him to do so.

When the red and the blue images are distinctly seen, the patient should be asked to point to each in turn. If, when pointing to one of them, say the blue, he points directly to the candle held in the surgeon's hand, it will be found that he locates the red image at some other point in space. In this case, the eye fitted with the blue glass is not the one affected; it is the other. Having thus provided the means of identifying the image formed on each eye, and having agreed to call the one which is projected to the point in space actually

occupied by the object the true image, and the other the false image, the following simple facts are of importance:—

It is possible that the two images may be on the same level at some little distance from each other. Again, they may be at different levels, the one either directly above the other, or else separated from the other not only by a vertical distance, but also laterally. All displacements of the false image may be regarded as made up of two components, the one horizontal and the other vertical. It is true that in certain cases the patient states that one image is nearer than the other, but such displacements are relatively unimportant.

Adopting the convention of co-ordinate axes as used in analytical geometry, let the origin of the abscissa XX^1 , and of the ordinate YY^1 , be at the fixation point, then the position of the false image may be taken as the point xy . The value of y may be nothing, in which case the true and the false images are on the same level. On the other hand, for certain directions of fixation, x may be zero; the true and the false images are then in the same vertical straight line. As a rule, however, both x and y have finite values, which may be either positive or negative.

In the examination of persons suffering from diplopia, it is necessary first to ascertain in which part of the binocular field of vision there is diplopia. Thereafter, we must determine whether the diplopia is homonymous or crossed, and, lastly, notice in which direction of fixation the distance between the true and the false images decreases or increases. Attention should also be paid to the manner in which the patient carries his head, and to any inclination which the images may have the one to the other. In most cases, a thorough investigation as to these matters will show which muscles are involved, and, consequently, the nerves affected.

When double vision is present chiefly in upward fixation, then the muscles to which attention must specially be given are those which elevate the eyeballs, viz., the superior recti and the inferior obliques. On the other hand, should it be most prominent in the lower part of the field of fixation, then the inferior recti and superior obliques should be carefully examined, for they are the muscles which are concerned with downward movements of the eyeballs. When the true and the false images are approximately on the same level, and the apparent distance between them increases on carrying the test-object to one side, but decreases on carrying it to the other, then the internal or external recti are the muscles chiefly involved.

At this point it is well to explain what is meant by a crossed and by a homonymous diplopia.

Fig. 1 illustrates a divergence of the left eye. If M be the macula of the right eye, and M^1 that of the left, M^1 is nearer the middle line of the body than it would be were there no divergence. Let P and P^1 be rays of light coming from a distant object; the image on the right retina is formed at the macula. Hence, the object with this eye is seen in its true position. On the left retina, the image is made at some point as a . This point corresponds in normal circumstances with a point in space such as A ; consequently, when there is divergence, the false image is seen at A .

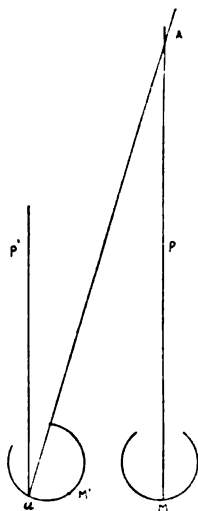


FIG. 1

Suppose, now, a piece of red glass to be placed before the left eye and a piece of blue before the right, then the red image appears to the patient's right and the blue to his left. Here we have a simple case of crossed diplopia. If the red glass is before the left eye and the blue is in front of the right, and the red image appears to the patient's left hand side and the blue to his right, then the diplopia is homonymous. *When the diplopia is crossed there is, except in very special cases, divergence; when it is homonymous, there is convergence.*

The muscles which cause divergence are notably the right and left external recti: when one of them is paralysed there

is convergence; and, consequently, if diplopia be present, it is homonymous (see Fig. 2).

The following directions will enable the observer to ascertain which of the external recti is the one affected:—

When the patient holds his head erect and looks straight in front of him and sees two images of the candle, one with each eye, he will observe, if the light be held at a given distance from him, that there appears to be a certain interval between the two images.

If the light be held at the same distance from him, and at approximately the same distance from the ground, and be

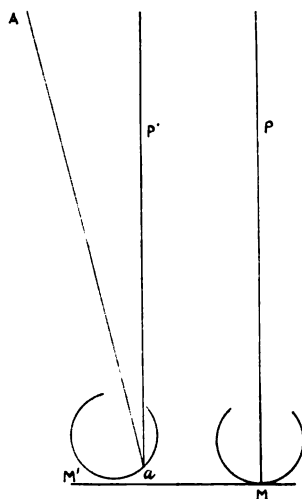


FIG. 2.

Represents the conditions in convergence of the left eye due to paralysis of the external rectus muscle. The false image at *A* is on the same side as the paralysed muscle.

now carried first to one side and then to the other, it will be found that the distance between the two images appears to increase for one direction of the movement (say, for example, from left to right), but to decrease for the other. Thus, if we have to deal with a case of paralysis of the external rectus of the right eye, when the candle is moved from left to right relatively to the patient, the left eye, not being affected, follows the movement perfectly, and the image in this eye is formed in the macula. As the right eye cannot follow the movement on account of the paralysis, the image belonging to it is, as the candle is carried towards the light, formed at an

increasing distance from the macula, and, consequently, the false image is projected more and more to the right. Hence the diplopia is *homonymous*, and the apparent distance between the true and the false images appears to increase when the candle is carried towards the side of the paralysed muscle.

When, on the other hand, the candle is carried towards the patient's left side, but kept at an approximately constant distance from him, it comes into that part of the field of binocular fixation controlled, so far as the right eye is concerned, chiefly by the internal rectus, and for the left eye mainly by the external rectus. Since neither of these muscles is paralysed, as the candle is moved into this part of the field of vision the images gradually approach each other until they at last become merged.

The patient will, in the case above mentioned, rotate his head on its vertical axis towards his right shoulder. By so doing, he uses for binocular fixation largely the internal rectus of the right eye and the external of the left. Thus he may obtain binocular fixation, and altogether avoid the diplopia from which he would suffer were his head held in the proper position. Hence, in paralysis of an external rectus muscle the *diplopia is homonymous and the head is rotated towards the side of the paralysed muscle.*

If the patient, with both eyes kept open, is asked to point to each image separately, he will indicate one at the place at which the candle is really held by the observer, but will locate the other at some other point of space. In this way the surgeon easily ascertains which eye is affected.

Suppose a case of paralysis of the external rectus of the left eye (Fig. 2, p. 245).

If the examiner holds up some object, such as his own finger, well to the patient's left side and asks him to touch it quickly with his forefinger, keeping the right eye shut, it will be found that the patient always passes his forefinger well to his own left of the object held up by the surgeon. The reason of this is obvious. One of the factors by means of which we locate objects in space is the angle through which the eyes are turned for purposes of lateral fixation. A certain angular displacement necessitates a certain amount of nerve stimulus to the muscles, and insensibly the patient locates the object according to the amount of nerve energy expended. When a muscle suffers from paresis, for a given angular rotation a larger amount of nerve energy is expended than under normal conditions. Consequently, the patient believes the object in

the above experiment to be farther to the diseased side than it is in reality.

The superior and inferior oblique muscles have, in most people, the power of causing a rotation of the eyeball outwards round its vertical axis. This is a function of the obliques which is apt to be overlooked. Were these muscles capable of equal and simultaneous action with all the other muscles in abeyance, then the eye would undergo a rotation outwards approximately round its vertical axis. This is due to the insertion of these muscles on the eyeball; consequently, when either is paralysed, there is a slight divergence accompanied by a slight homonymous element in the diplopia. This must not be forgotten, although it is not the principal displacement in paralysis of the muscles under consideration. Two others are more prominent. There is in the diplopia due to paralysis of an oblique muscle a marked vertical element. This is due to the fact that the superior oblique moves the eyeball downwards, while the inferior moves it upwards.

When there is paralysis of the superior oblique the vertical element is chiefly observed in the lower part of the field of fixation. If the light be carried downwards, the healthy eye follows it perfectly, and the image is formed on the macula.

The image on the retina of the affected eye is formed at an increasing distance above the macula, and, consequently, the false image is projected farther and farther downwards. Therefore, in paralysis of the superior oblique the vertical or *y* element of the diplopia increases when the test-object is carried downwards.

An important function of the inferior oblique is to carry the eyeball upwards. Consequently, in paralysis of this muscle the diplopia is chiefly in the superior portion of the field of vision, and the vertical distance between the true and the false images increases as the candle is moved upwards.

The other important element in the diplopia associated with paralysis of a superior or inferior oblique muscle is due to the want of proper rotation round the antero-posterior axis of the eye. Hence, in diplopia, due to paralysis of an oblique muscle, the false image has a certain inclination. The true and the false images are no longer parallel with each other. In paralysis of the superior oblique the top of the false image is directed towards the true one, which preserves its vertical direction. When the inferior oblique is affected the top of the false image is bent away from the true image. To summarise:—

In paralysis of the superior oblique, the diplopia is chiefly vertical, the distance between the true and the false images increases as the test-object is moved downwards, the images are homonymous, and the top of the false image is inclined towards the true one.

Thus far we have discussed these forms of paralysis of the extrinsic muscles of the eyeballs which cause homonymous diplopia, and have seen that this takes place when these muscles, whose normal action is towards divergence, are affected. Attention must now be given to the various forms of heteronymous or, as it is commonly called, crossed diplopia.

Fig. 1 (p. 244) illustrates the conditions which obtain in paralysis of the left internal rectus. The eyeball diverges. In the right eye the image is formed at the macula; in the left it is formed at some point such as *a*. This part of the right retina in health is associated with impressions coming from the left; consequently, the false image of the test-object is projected to some such point as *A*¹. The diplopia, therefore, is crossed.

When there is a crossed diplopia and the true and the false images are approximately on the same level, on fixation of a test-object held in the same plane as the patient's eyes (*i.e.*, when the γ element is zero, or nearly so), then the muscle affected is one or other of the internal recti. To determine which of the two is the one involved, the candle must be moved first to one side and then to the other. If in Fig. 1 (p. 244) we suppose the test-object to be moved first towards the patient's right, his right eye will follow it perfectly, but on account of the paralysis of its internal rectus the left will not. The more the candle is carried to the right side the farther is the place on the left retina at which the image is formed removed from the macula, and, consequently, the greater is the distance between the true and the false images. Thus, this distance increases on carrying the candle towards the healthy side. Again, the patient in the case under discussion would, for ordinary fixation of objects situated in front of him about the level of his eyes, rotate his head towards the right side, *i.e.*, towards the side of the unaffected eye.

The more he does so the nearer does the image on the right retina approach the macula, and by turning his head far enough he may cause the diplopia to disappear altogether. In paralysis of an internal rectus *the diplopia is crossed, the images are on the same level or nearly so, the distance between them increases as the test-object is carried from the median*

line towards the healthy side, and the patient rotates his chin to this side so as to diminish or get rid of the diplopia.

Two other muscles in each eye, in addition to the internal rectus, have, in health, a certain power of convergence. These are the superior and inferior recti, which, owing to their somewhat oblique direction from the posterior part of the orbit to the anterior part of the eyeball, have a tendency to rotate the eyeball round its vertical axis. This is not their chief function, but it is a subsidiary one which must not be forgotten. The superior rectus rotates the eyeball upwards round its horizontal axis, and at the same time turns the upper part of the vertical meridian of the cornea slightly upwards. The inferior rectus rotates the ball downwards, and pulls the lower part of the vertical meridian slightly inwards.

Were the two muscles to act simultaneously and with the same force, with all the other muscles quiescent, then the result would be a rotation of the anterior surface of the eyeball inwards round its vertical axis. Hence, in paralysis of either the superior or the inferior rectus there is a tendency to divergence, and, consequently, the diplopia is slightly crossed.

The chief element, however, in the diplopia is vertical. When a superior rectus is affected the diplopia is most characteristically present in the upper part of the field of fixation; when the inferior is the muscle involved, in the lower.

If the diplopia indicates that a superior rectus is involved, the following considerations will assist the student to ascertain which of the two is the one affected.

In Fig. 3 (p. 250) we have the conditions which exist in paralysis of the superior rectus of the right eye.

R represents the portion of the retina of the right eye in the neighbourhood of the macula, M^1 and *L* the corresponding part of the retina of the left eye in the neighbourhood of its macula *M*. For convenience of demonstration the one eye is drawn slightly in advance of the other. *AM* and *AP* are rays of light coming from a suitable test-object such as a candle flame. As the object is raised the left eye follows it perfectly, and the image is always formed on the macula. Owing to the paralysis, the right eye cannot follow the candle upwards, so the image of *A*, instead of being formed at M^1 , is made at *P*. This is the part of the retina which, in health, is associated with impressions coming in some such direction as A^1P , consequently the false image is projected to A^1 .

The farther the test-candle is raised the greater is the

distance between M^1 and P , and, therefore, the higher up is the false image projected.

The superior rectus muscle also tends very slightly to rotate the eyeball round an axis which may be taken as approximately antero-posterior. Hence the false image is no longer parallel with the true, but is inclined, the top of the false image being directed away from the true one.

In paralysis of the superior rectus the diplopia is vertical, it is slightly crossed, and the upper part of the false image is directed away from the true.

The vertical element increases as the image is moved upwards. To avoid diplopia the patient throws his head slightly back, and rotates his face towards the sound side.

From the preceding remarks regarding paralysis of the superior rectus the student will have little difficulty in understanding the conditions which obtain when the inferior

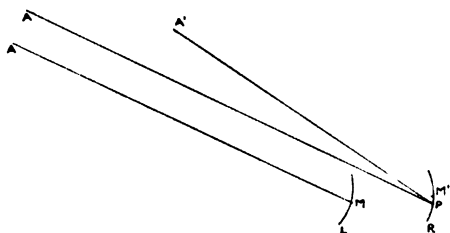


FIG. 3.

rectus is affected. Here, also, the chief element of the diplopia is a vertical one, but it is specially manifest in the lower parts of the field of vision. The lower of the two images is the one belonging to the affected eye. The conditions are similar to what are found for the superior rectus, only in the reverse direction. As the inferior rectus runs obliquely forward from the back of the orbit to the anterior aspect of the eyeball, it has, in health, a tendency to produce a slight convergence, consequently, in paralysis of this muscle there is a slight divergence.

In paralysis of the inferior rectus the diplopia is vertical. The images are slightly crossed, and the top of the false image points towards the true one.

In cases of true paralysis the test with the candle and the red and blue glasses is probably the most satisfactory.

Another excellent appliance for testing muscular affections is that of Maddox, an instrument which is now used in

nearly every clinic, and is figured in most of the modern text-books.

The student is reminded that the following muscles are supplied by the third nerve, namely, the internal rectus, the superior rectus, the inferior rectus, the inferior oblique, and the levator palpebræ superioris. This nerve has also to do with accommodation, and with the contraction of the pupil; for the branch to the lenticular ganglion is usually derived from that branch of the third nerve which supplies the inferior oblique. Sometimes the muscles of accommodation and for contraction are innervated by a branch derived from the sixth nerve. The external rectus muscle is supplied by the sixth, and the superior oblique by the fourth. The dilatation of the pupil depends on a special muscle which is supplied by the sympathetic.

ON REMOVAL OF THE SUPERIOR ROW OF CARPAL BONES IN ACUTE SEPTIC DISEASE OF THE WRIST-JOINT.¹

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THE cases which form the subject of this paper were all examples of severe spreading cellulitis of the hand. The term "hand" is employed, as the disease had invaded the bones and joints as well as the tendon sheaths, subcutaneous tissue, and skin. In each case the mischief, starting superficially, spread rapidly from one structure to the other, and, in the light of subsequent events, it is questionable if the initial treatment was active enough. Before operation, the question of amputation was considered, and the carpal bones were removed as a substitute for it. In the three cases, the appearances warranted such a bad prognosis that amputation would not have been unjustifiable. On the contrary, it would have been probably considered absolutely necessary had not some of the carpal bones been removed as an alternative. In Case I, the bones removed were themselves much diseased—showing evidence of a septic osteomyelitis; while, in the

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 4th April, 1902.

others, the disease had produced ulceration of cartilage, accompanied by a rarefying osteitis, but without the presence of pus in the cancellous spaces. It may be well here to state the view of the condition which I hold. The skin allows the entrance of the infective agent. This ultimately finds its way into all the structures of the hand, forming thus a cellulitis of the whole hand. Incisions are made into the subcutaneous tissue to prevent the formation of pus, which need not necessarily form at all. As far as the superficial tissues are concerned, this may or may not be successful. The form of the disease in the bone is represented by a rarefying osteitis, and this is quite apart from the joint lesion. Thus, the disease in the bone may advance to the formation of pus, and for this reason the removal of individual bones, irrespective of their position, may be necessary. The joint which shows the most tendency to become the seat of a septic process is the wrist-joint proper. The bones there become eroded of their cartilage, but may not themselves be further implicated in the disease than are the other neighbouring structures. The cellular tissue and the skin may break down, the tendon sheaths may take part in the process, and the bones may do so also. Pus formation in a carpal bone will lead to involvement of a joint, but the breaking down of a joint need not necessarily lead to the formation of pus in a bone. In order to treat all the conditions, removal of bones is employed. This drains the joint cavities, and, as the cartilage is gone from the bones, their drainage requires nothing further than free escape for their exudations. Where the process has been allowed to proceed to complete disorganisation of all the carpal bones, &c., amputation will doubtless be required. It is a noted fact that pyæmia is very prone to follow septic bone lesions, and I would take it that, when the joint becomes involved in the septic process, the treatment must be radical in order to minimise the danger of metastasis. If the bones are themselves the centres of pus formation they must be removed, but, if merely the cartilage be eroded, it is open to question whether any of the bones ought to be removed.

CASE I.—W. M., æt. 35, stoker by trade, was admitted to Ward XXIII of the Western Infirmary on 11th July, 1901, with an ugly gash extending deeply into the web of the left thumb, and involving principally the dorsal aspect—giving the appearance as if the thumb had nearly been wrenched from the hand. The wound was very septic, and there was

lymphangitis extending from the hand upwards. The trouble soon became localised to the hand, and six days later pus was evacuated from the back of it; the tendons there were found exposed. Some collection had also taken place in the palm, but that had no connection with the flexor sheaths. One month later the various wounds were looking well, though the whole hand was cedematous. There was tenderness at the wrist-joint, and grating was found on movement. Three days later the top row of the carpal bones, with the exception of the pisiform, was excised. The head of the os magnum and the upper part of the unciform bone in contact with it were snipped away to leave a more even surface. The bones removed were infiltrated with pus; the os magnum and unciform were in the condition of a rarefying osteitis, and could be cut with a knife. The cavity left was freely swabbed out with pure carbolic acid, which was allowed to act for an instant, then the action of the acid was stopped by washing out with methylated spirit. The cavity was firmly packed with gauze. The bones were removed through the dorsal incision, only the attachment of the posterior ligament of the wrist-joint to the scaphoid made it difficult of separation.

With the exception of the formation of a small superficial abscess on the back of the hand, progress was uninterrupted, and he was dismissed to be an out-patient at the beginning of September. He continued coming up occasionally till the end of the year, and he had chloroform administered during the interval, in order to have passive movements performed. By the end of the year it became evident that the maximum benefit from massage and passive movement had been reached, and that the tendons, which were embedded in cicatricial tissue, required to be dissected free. He was therefore readmitted for this purpose, as his hand was next to useless and he was not able to hold a shovel. At the end of last year the extensor indicis tendons were freed from each other and from the surrounding cicatricial tissue in the region of the original wound. To prevent readhesion, they were surrounded by a film of gelatine prepared in the following way:—Sheets of French gelatine were soaked in a 10 per cent formol solution for twenty-four hours, washed in water, put into 1 in 500 corrosive solution, and brought to the boil. They were then placed in alcohol to harden, and from that were taken out and rinsed in carbolic solution before use. The extensor tendons over the wrist-joint were found to be gathered together into a mass which proved to be cicatricial tissue with the intact tendon of the little finger running through. A breach of

about an inch in the tendons (due to previous sloughing) of the second and third fingers existed, and the ends could not be approximated. Lotheisen¹ has recommended that tubes of gelatine, prepared in a similar manner to those used, be employed to prevent vicious union taking place after suture of tendons. To permit of the widely separated tendons being approximated, the origin of the extensor communis was dissected from the external condyle, &c., and the ends of the tendons were brought together without tension. The sutured parts were surrounded with films of gelatine as were those lower down, drainage-tubes inserted, and the wounds closed. Unfortunately, all three wounds went septic, and it is questionable if any benefit accrued to the hand from the operation, with the exception of improved movement in the extensor indicis.

The condition of the patient at the beginning of March was as follows:—Crepitus and pain on movement had disappeared, deformity was not excessive, and the shortening was not so marked as might have been expected—amounting only to half an inch. Movement of the hand and fingers was sufficient to permit him to follow his employment. The mobility of the wrist was very slight, but, on account of the fibrous nature of the union, the range of movement will probably increase.

In this case, the joint had evidently become involved at an early stage in the disease; and, were it not for the septic invasion of the bone and joint, there would have been no abscess formation, for the general inflammation tended to resolve under the antiseptic treatment. Owing to the rupture of the capsule of the joint, the pus drained into and excavated the subcutaneous tissue. It is also conceivable that the joints became implicated from the advance of the disease in the bones.

The function of the advanced muscle was perfect, and has remained so. This is a very important point, for, though the blood-vessels and nerves supplying the muscle must have been considerably stretched, no harm has resulted. Where union by first intention takes place, a much better result from such operation may be looked for than has occurred in this case.

CASE II.—A. M., æt. 9, was admitted to Ward XXIII of the Western Infirmary in August, 1901, with cellulitis of the left hand. Fluctuation was not present, and exploratory incisions

¹ Lotheisen, "Zur Technik der Nerven und Sehennaht, *Archiv für klinische Chirurgie*, 1901, Bd. lxiv, H. 2.

into the dorsum and palm failed to detect the presence of pus. Two days later there was diminution in the swelling, but on the following day the swelling had increased. A large collection of pus was then evacuated; incisions were made into the fore-arm to attempt to limit any upward spread of the infection. At the beginning of September the temperature was normal, but the wrist-joint was found to be eroded. The superior row of the carpal bones was removed, but the os magnum and unciform were left intact. The removal of these bones was not carried out to prevent pyæmia, but to hasten the process of repair and to give a more useful wrist. The infection of the joint had taken place early, and the rupture of the capsule had been the cause of the sudden increase in the swelling with the formation of abscesses. In this case, as in the former, the infection had found its way into the joint by the posterior lymphatics. It is to be borne in mind that the posterior ligament is much thinner than the anterior, and so the joint is more liable to become invaded from this side. At the onset there was no definite sign that the joint was infected, for, although the whole hand was the seat of cellulitis, many similar cases recover under antiseptic treatment, with superficial incisions not extending into the joints.

Since being dismissed, he has been coming to the hospital from time to time to have passive movements performed, and there is considerable latitude of movement at the wrist. The shortening amounts to a little over half an inch. Further improvement may be expected from the employment of massage and passive movement.

CASE III.—A. B., æt. 47, formerly a militiaman, had suffered from malaria, and had been at the war. He was admitted to Ward XXIII of the Western Infirmary in September, 1901, with swelling over the back of the right hand of five days' duration, and with pain and swelling over the outer surface of the dorsum of the left foot and over the heads of the right metatarsal bones of four days' duration. The right hand was freely incised, and the pus evacuated. Towards the end of the month, crepitation was found in the wrist-joint, and the upper row of carpal bones was excised as in Case I. The bones were very soft, but did not contain pus. A little later, as the radio-ulnar joint was giving rise to much pain on movement, the cartilage being also gone, the head of the ulna was pared away so as to prevent contact with the radius. A swelling which had arisen on the left knee was tapped, and the fluid, on examination, was found to contain a diplococcus.

This may or may not have been the gonococcus, but at the time was considered to be so. At the beginning of October, the knee was opened and a tube passed through. The edges of the cartilage were beginning to erode: the fluid removed was turbid serum. Shortly after this, and when the incisions in the left foot had almost healed, grating was made out in the cubo-metatarsal joint; it was opened, and a culture taken from it proved sterile. This tends to support the view that the gonococcus was the cause of the dry erosion which was taking place in the knee and also in the foot. The joint was erased; much bone, in a very rarefied state, was scooped away with the spoon. Towards the end of the month, on account of pain, the wrist-joint was explored and some necrotic bone removed. Notwithstanding constant attention, the tissues of the hand showed little reparative power, and the general condition of the patient was so unsatisfactory, from the almost constant pain and uneasiness in the wrist with the want of sleep thereby entailed, that amputation was proposed but declined. In this case, the disease was either gonorrhoeal arthritis—which rarely advances so far—or was a diplococcus (not the gonococcus) arthritis which was pyæmic. Such cases have been described by Cave¹ and Raw.²

Later, pain in right foot was complained of, and examination revealed that the third metatarso-phalangeal joint was bared of its cartilage; the former incision over this region had by this time healed. The knee had also been allowed to close, as there was little discharge coming from it. The feet were put up in plaster, and he was allowed to go home at the beginning of the year. The condition in March of this year was as follows:—The radio-ulnar joint was still troubling—not enough of the ulna having been removed. Movement at the wrist and of the fingers was very limited. The shortening amounted to three-quarters of an inch. The foot which was operated upon was tender, but useful; the toe condition was *in statu quo*. The knee grated on movement, and he had to use a stick, or, if he had far to go, crutches. The radio-ulnar joint was reopened, and more bone from both radius and ulna was removed, so as to prevent contact of the bones.

REMARKS.

I. *The necessity for the operation.*—1. This depends upon the stage at which the disease is found. Does an initial

¹ Cave, *Lancet*, 1901, vol. i.

² Raw, *British Medical Journal*, 1901, vol. ii, p. 1803.

involvement of the joint as part of the general infection permit of an early diagnosis? Looking back at those cases, I can see no evidence decisive enough to have warranted the opening of the complicated wrist cavities as a primary operation. Many cases, similar to these in severity, treated by incisions and antiseptics as these were, recovered without involvement of the joints, or with only involvement of the radio-ulnar. It is merely an accident that the disease passes on to the formation of pus, be it in the subcutaneous tissue, the tendon sheaths, the bones, or the joints. It is very questionable if any good would ensue from opening these cavities, by way of prophylaxis, and it seems that mere incision into the joint would not ensure the object desired. In this connection it is interesting to note the effect of drainage of the knee in Case III. There the process already begun had almost ceased to progress, and the joint has remained useful. When, however, the disease has invaded the joint, and has caused ulceration of cartilage, the removal of bones is useful, even though the condition is quiescent. If the temperature is still high, and the disease evidently advancing, this procedure has every hope of retarding the disease, and of limiting the damage. In those cases where the bones are involved in the septic mischief, and are not merely in the same condition corresponding to the non-suppurating cellular tissues, their removal becomes a matter of necessity. Such was the state of affairs found in Case I, the bones showing an osteo-myelitis, which is a somewhat rare condition.

2. Removal of these bones reduces the likelihood of pyæmia, which is not such a remote sequel to sepsis of the wrist-joint. The occurrence of this misfortune will depend very much on the resistant powers of the capsule of the joint; should this be very firm, the joints will drain into the general circulation—fortunately, however, the capsule usually ruptures early, and it does so in its weakest part, viz., posteriorly—the infection travelling back the same route as it came.

It is to be remembered that these cases here reported were exceptionally severe ones, and the possibility of an ultimate amputation was never quite out of mind till the effect of the removal of the bones became self-evident.

3. For the relief of pain. Once the cartilage has disappeared from the bones, pain becomes a most distressing feature, and the smallest movement gives rise to great discomfort. No doubt, in such cases where the bones are infiltrated with pus, the fact of the cartilage being absent from them does not mean a very great danger to the patient, but it tends to

depress the already worn-out person by interfering with rest; without operation, this condition persists for a very long period. There seems to be the smallest tendency for ankylosis to produce a spontaneous cure, and in Case III the condition in the toe has remained the same for months. This manner of cure will consume a large amount of time while it takes place by ankylosis, and with the maximum impairment of the joint.

4. To avoid bony ankylosis, the removal of the bones from the wrist is the most efficient means available. The resulting union is fibrous, and where the requisite attention can be given to the case considerable movement may be looked for at the wrist, and even the least movement is much appreciated by the patient.

5. The removal of the bones in hastening the process of repair gives sooner a joint which may be used. Passive movements may be started also shortly after the operation. Where the cartilages are gone, passive movements are not tolerated at all, and the adhesions and immobility of the parts become perpetuated. It may be questioned, of course, how the conditions following this operation are superior to those without it, but when it is borne in mind that these bones were removed in order to stay the advance of a grave lesion, and where amputation was the alternative, the results may be accorded a less critical reception.

II. *The Deformity.*—The deformity consequent to resection of the wrist-joint for tubercular disease is its worst feature, and though flexion of the wrist follows here to a certain extent, it does not interfere with the utility of the hand, nor is it unsightly. In order to reduce it to a minimum, the hand is put up after operation in an extended position, and, later, the splint is worn only at night, while passive and active movements are performed during the day. Chloroform may be required to get the maximum benefit from passive movements, and it may be given very frequently. These patients being latterly treated as out-door cases did not have as much attention as was desirable, and the results are due to their own exertions as far as movement is concerned.

III. *Subsequent operations* for the restoration of function leave much to be desired, and there is a wide field open to surgery of the experimental variety. Mere freeing of tendons from adhesions and from cicatrices is fairly successful. It requires to be done under the strictest anti- and aseptic precautions. In Case I, where the attempt was made to get union of the ends of tendons, perhaps it would have been

better to have waited for the elapse of a longer interval, for there is no doubt that minute centres of infection can remain in the dense cicatricial masses, with recrudescence at the subsequent operations. I have no wish, however, to shelter myself for this failure behind such a theory, but on another occasion, besides employing even more stringent aseptic precautions, will allow a longer interval to elapse.

The employment of gelatine to get a non-adherent tendon-junction is very ingenious, and I cannot think that the failure in this instance was due to its adoption.

The advancement of the muscle to bring down the proximal end of the defective tendon to meet the distal end is a procedure of very great value, and the absence of danger, other than sepsis, will make me employ the method again. It has been recommended lately for such purposes.

IV. *The operation.*—The removal of the bones is an easy thing in itself, the only difficulty met with is in the attachment of the capsule to the dorsum of the scaphoid. For their removal advantage can be taken of the former incisions, but it may be advantageous to make counter-openings for the purposes of drainage. Pain is usually present for some hours after the operation, and it may be necessary to treat it. The first dressing usually requires the administration of a general anæsthetic, and for this purpose bromide of ethyl is excellent. A drainage-tube may then be substituted for the packing. The action of the pure carbolic is most beneficial in all septic cases, for during the removal of the bones many new paths for septic invasion are opened up, and, besides causing thrombosis in the small vessels, the carbolic acts as a splendid antiseptic, and there is much less chance of poisoning from the short application of the strong acid, than from the long continued action of its solutions. The inhibiting action of the alcohol, which is poured into the cavity after the carbolic, is efficient. The hæmorrhage after the operation is profuse, but unless it continues to a dangerous extent, or for a very long time, need not cause anxiety. It is a capillary ooze, and there are few bleeding points which necessitate ligation. Besides, a certain amount of depletion is beneficial. Few of the standard works on surgery refer to the removal of carpal bones, but in the *Handbuch der Chirurgie*¹ the procedure is mentioned as occasionally necessary.

¹ *Handbuch der praktischen Chirurgie*, Bergmann, Bruns, und Mikulicz, Lieferung 23, S. 446.

ETHYL CHLORIDE AS A GENERAL ANÆSTHETIC.

BY JAMES ADAM, M.A., M.D., HAMILTON.

ETHYL CHLORIDE as a general anæsthetic being still on its trial, the following rough note may be of some interest.

Since November last I have used this drug, on sixty-one different occasions, on thirty-four patients (not reckoning separately those times when the patient has been twice or thrice anæsthetised at one sitting).

I have no detailed notes, so that this is written merely to indicate the clinical usefulness of this method of procuring anæsthesia in minor surgical operations, and not to give scientific details as to the physiological effects of the drug. Such, indeed, are impossible to note minutely when one has, single-handed, to anæsthetise the patient and to accomplish as much as possible during the short time available. The brands I have used are those called "Narcotile" and "Kelene," chiefly the latter, sprayed from a spring-top graduated glass bulb. The drug is sprayed through a slit in a hollow metal globe containing absorbent cotton. This globe fits on a celluloid, rubber-rimmed face-piece, similar to that used for nitrous oxide, with inlet and outlet valves. The rubber rim must be inflated so that the mask fits closely to the face, thoroughly excludes air, and prevents loss of drug by evaporation, else anæsthesia will be difficult to procure.

I have always made the patient adopt the semi-recumbent posture, and insisted on neck- and waist-gear being loose, but have mostly not troubled about a two-hour interval elapsing after the last meal. I prefer to have someone to note the duration of administration in seconds, but often simply lay my watch handy and note the time myself.

If the patient is not nervous, and does not resist, he usually goes quietly over, without movement or change of colour, but breathing a little more deeply as anæsthesia develops. Usually in forty-five or sixty seconds, sometimes less, often more, the patient is anæsthetised. This is determined by pinching the cheek or noting that an arm is limp. The inhaler may now be removed if a minute's anæsthesia is all that is wanted. I have occasionally kept it on till stertor develops, say thirty to forty-five seconds longer, and then got two or three minutes' anæsthesia.

The quantity of drug used for one anæsthesia varies: on an average, about 10 c.c. have been used, but I have used twice that

amount. Probably I use far too much, as I have often seen excess run out of the receiver down the inside of the face-piece, or have been able, after the operation, to wring a quantity of drug out of the cotton-wool from the receiver. Lately, I have been spraying the drug continuously for twenty seconds or so, and then intermittently, keeping the mask closely applied to the face all the time.

As a rule, women go under the anæsthetic much better than men, because they are less nervous. The two failures I have had have been in nervous, excited men. When such excitement is present there may be violent struggling while anæsthesia is being induced, and still more when it is passing off. This is an exception. But it is most important for the doctor's own sake never to anæsthetise a woman in this way without a third person being present. As a rule, the patient wakes up dreaming or slightly dazed, perhaps making a few excited movements, feels all right in a minute or two, and is ready to walk home. If desirable, anæsthesia can be re-induced at once or after a few minutes' consciousness. Once I have seen vomiting, probably owing to too recent a meal. Rarely during the anæsthesia there is tonic spasm with concomitant squint and twisting of body and limbs.

It can frequently be noticed that anæsthesia, or, perhaps, one should say analgesia, preceeds and outlasts unconsciousness, so that the patient may know a tooth is being extracted, yet not feel pain, or may even open the mouth if requested, and have an extraction without pain. Usually the mouth is rigidly clenched, so that for an operation on the mouth a gag must be inserted before applying the inhaler.

I have used this method chiefly for tooth extractions, twice for whitlows, once for adenoids.

In tooth extractions the result has usually been satisfactory, six or eight extractions being often possible with one inhalation, though one has often to be content with less. Recently I anæsthetised an anæmic woman of middle age, for Dr. Downs, of Motherwell, who extracted eighteen stumps during three inhalations, the patient being allowed to wake up and wash out her mouth between them. When a large number of extractions like this have to be done, necessitating more than one inhalation, the patient may prefer to return some days later. Many of my cases did so, though now I should probably manage to do more with one inhalation, and also repeat the inhalation more frequently at one sitting.

By way of illustration, I may mention my last two cases.

1. Young lady came to have two upper wisdom teeth

extracted. Forty-five seconds' inhalation, 10 c.c. drug. Left wisdom extracted, gag shifted to other side of mouth, right wisdom and two first molar stumps extracted. No change of colour nor the slightest movement throughout to indicate either anæsthesia or pain.

2. Woman of 38 came to have buried bicuspid root extracted. About sixty seconds' inhalation, some stertor and some spasm and rigidity of limbs; stump extracted; two to three minutes' unconsciousness.

I have only once had an opportunity of trying ethyl chloride anæsthesia for adenoids. It was a failure, and I had to have chloroform given before attempting the operation.

The impressions—they can hardly be called conclusions—which I have formed from this limited number of cases are:—That this method of anæsthesia is as safe as that by nitrous oxide; that it is swifter in action: that, involving much less apparatus, it is more convenient and handy: that it may be useful for rather a wider range of cases in consequence of the longer and repeated anæsthesia procurable.

The question of safety,¹ of course, has yet to be determined, though I have seen nothing to make me apprehensive. The question of usefulness will depend largely on that of safety: but a rapid, safe, and portable anæsthetic that can be carried to the patient's house or used in the consulting room with equal ease, and without the presence of a second doctor or even a nurse, is, even if the anæsthesia be short, one with obvious advantages in minor surgery over chloroform, ether, or nitrous oxide for the general practitioner, and especially for practitioners in the country. It does not cause the ghastly livid effect of nitrous oxide, nor the pallor of chloroform; unlike ethyl bromide, it rarely produces sickness.

That it will displace chloroform in such an operation as that for adenoids is doubtful, for, though I shall try it again, that is an operation which should not be done in a hurry, and which should be both preceded and followed by careful palpation of the pharynx. If one could be sure that three or four minutes' anæsthesia would be enough in a given case, then ethyl chloride might be used, especially if further experience show that such a swiftly-acting drug can be safely pushed for some seconds of stertorous breathing. Meantime, it is an anæsthetic I would not willingly be without.

¹ Ware (*New York Medical Record*, 6th April, 1901) reckons 1 death in 11,207 cases, but excludes two others on account of insufficient data and uncertainty of the product used.

CASE OF DOUBLE EMPYEMA FOLLOWING ON DOUBLE PNEUMONIA.

By GILBERT GARREY, M.B.,
Assistant Medical Officer, Town's Hospital, Glasgow.

THE patient, a boy, *æt.* 17, was admitted to Hospital on 19th December, 1901, complaining of cough and pain in the side. He was also delirious.

On examination, he was ascertained to be suffering from acute pneumonia, consolidation having taken place at the left base behind, while the breath sounds in front were bronchial in character. There was, in addition, consolidation of the upper and middle lobes of the right lung.

Delirium continued for a full week, subsiding on the 27th.

On the 28th, examination showed the right side to be almost clear, some crepitus *redux* being got, together with some subtubular breathing over a small area. The left base was at this time the seat of both tubularity and crepitation.

The temperature fell to the normal on the 24th, but rose again and continued remittent afterwards.

On watching the progress of the case, it was noticeable that the respiratory murmur on the left side became gradually fainter, while the dulness persisted, and, on exploring with a grooved needle on 3rd January, pus was obtained.

Resection of the rib was done two days later, and the pleural cavity on the left side was washed out, the result being that the temperature improved. This improvement, however, only lasted for one day and part of another, the temperature returning to and maintaining its old characteristics.

There being no pus discharging from the left side, it became evident that there must be something more; and, on auscultating over the right side, some failure of respiratory murmur was made out. There was also dulness on percussion.

This side was explored on 17th January, and pus was got. Resection was done on the 19th.

The temperature fell on the 22nd, and remained down, the wounds in the chest closing rapidly.

The lungs became quite clear, and the respiratory murmur good.

The patient's general condition improved rapidly, and about the beginning of February he was allowed up. He has done well since, there being no further trouble as regards his lungs.

The double opening in the chest did not in any way seem to interfere with the respirations, as the number fell to 24 or 25 per minute, such a number not being very rapid considering the circumstances.

The pus was thick and creamy, being formed from broken-down plastic effusion, large pieces of which came away with the fluid discharge.

The delay in the pus-formation on the right side seemed to be due to the fact that it was an apical pneumonia, and probably the plastic effusion took longer to become purulent in that situation. However, the plastic effusion was found lying in large masses on the diaphragm when the chest was opened.

In this connection, it may be of interest to remark that out of 274 cases of pneumonia occurring in the Town's Hospital between 15th November, 1901, and 15th May, 1902, only 6 developed empyema, and these all recovered.

Dr. Johnston's usual practice is to resect the rib and wash out, using a long spoon, if necessary, to remove the broken-down plastic effusion, which is always present in varying amount in such cases. The patient is usually quite able to go about at the end of three weeks from the date of operation.

CORRESPONDENCE.

"CANCERODERMS."

To the Editors of the "Glasgow Medical Journal."

SIRS,—Dr. Brand, in a recent and suggestive address on the "Etiology of Cancer," reported in the *British Medical Journal* for 26th July, alluded to the presence and significance of surface growths and pigmentations in cancer, and suggested the possibility of such being in the nature of a "canceroderm" in the same way as one speaks of a "syphiloderm."

Bearing on this question, I have just had under my care a lady, aged 70, who suffered from a chronic sinus in the loin. The sinus led, by a circuitous course, to a carious spot on the inner surface of the last rib.

According to her statement, an abscess formed in the loin, after an attack of pleurisy, four years ago. The abscess was opened, and left a sinus which never quite healed.



The carious area of the rib was removed by me about a month ago, and the sinus dissected out. The operation wound has healed. The interesting feature of the case, however, is the presence of numerous bright red and bluish-red spots, studded principally over the abdomen, but also on the chest and back. The "spots" are angiomatous in character, number in all about sixty, do not disappear on pressure, and in size vary from "a pin's head to a lentil." (See illustration.)

They have all developed within the last twelve years, and she states positively that no trace of them was noticed before that date. They give rise to no inconvenience.

As far as I know, she is free from cancer. It is open to anyone, of course, to say that she may be affected by some latent form of cancer, but she has at present no symptom or sign suggesting any such change.

She bears, however, distinct evidence of her years. Her hair is grey, almost white; there is marked arcus senilis, and the vessel walls are hard and resistant.

Her only brother and sister are alive and well, aged 67 and 73 respectively; her mother died of "cancer of the breast" at the age of 45.

Are these spots to be taken simply as an evidence of senility, or are they to be regarded as a "canceroderm?"

I have seen similar spots in elderly people before, apart from cancer, and I have also seen them in cases of cancer.

Since the publication of Dr. Brand's paper I have carefully examined over 100 cases, irrespective of age and condition; and though in several of these there were to be found isolated and solitary surface excrescences and pigmentations, in only two, exclusive of the present case, could it be said that these were sufficiently pronounced and definite to attract attention.

One of these was a man of 50, an advanced case of carcinoma of the rectum; the abdomen was dotted here and there with bright punctate angiomata, small in size, and likely to be overlooked if not searched for specially.

In the other patient the surface growths were warty in character, and scattered all over the body. They had developed within the last ten years, and were possibly due to her want of cleanliness. She was over 70 years, and bore no trace of cancer.

One of the cases examined was a man, aged 47, who was suffering from epithelioma of the larynx. No surface growth or pigmentation of any kind was observed.

If such surface growths and pigmentations occur in elderly people, apart from cancer, and this seems to be the case

(Leser, De Morgan, Marmaduke Sheild, Höllander, and others), their presence can be of little value from a diagnostic point of view; in younger persons, on the other hand, their occurrence might, as Dr. Brand suggests, indicate a special vulnerability or presenility of tissue—a state of tissue which is supposed to court the onslaught of malignant disease. Can they then, under these circumstances, be in the true sense a “canceroderm?”—I am, &c.,

GRANT ANDREW.

GLASGOW, *September, 1902.*

Obituary.

RUDOLF VIRCHOW.

AT 2 o'clock on the afternoon of 5th September last Virchow died at Berlin in the eighty-first year of his age. On 3rd January of the present year (1902) in alighting from an electric car in the Leipziger Strasse he slipped and fell heavily, sustaining a fracture of the neck of the femur. Since then, notwithstanding temporary improvements, he had been slowly failing in bodily strength; and he passed peacefully away in the presence of his family a few days after returning to Berlin from Harzburg, whither he had gone in search of rest and change.

Thus closed one of the most remarkable careers in the whole history of medicine. It is, perhaps, not too much to say that Virchow's influence on the progress of medical science and thought was greater than that of any other man in the nineteenth century. In Germany his power as a master mind in medicine was widely felt even before the first half of the last century had been completed, and during the last fifty years his name has been a household word in every medical school of the civilised world. Men of every country, now grown grey in the practice of their art, heard in their student days his writings quoted and his opinions expounded as those of a great master of the type of Harvey, Morgagni, or John Hunter; and, in this country at least, they were astounded, when, on his delivery of the Huxley Lecture at the Charing Cross Medical School in 1898, they were reminded

that his marvellous brain was still active, and his power of work apparently as great as ever. But astonishment passes into absolute amazement, when it is recalled that this man was not only the greatest living pathologist of his own and perhaps of any time, and an authority of the first rank on public health, archæology, and anthropology, but also a great political leader, who contended "on equal terms with one of the greatest statesmen of the century," and so effectually that Bismarck, in 1865, when Virchow succeeded in defeating the Government on the motion to create a navy, actually challenged the great pathologist to a duel. With the death of Virchow a gigantic intellect and a noble personality has passed from our midst.

Rudolf Ludwig Karl Virchow was born on the 13th October, 1821, at Schivelbein, a small town in Pomerania, not far from Stettin. His father, Karl Virchow, was a merchant in the town, and his mother's maiden name was Johanna Hesse. Of the family history nothing is known. He was educated till his thirteenth year in the local school, and in 1835 he passed on to the "Gymnasium" of Cöslin. In 1839 he left Cöslin, and, with a thorough working knowledge of Latin, Greek, Italian, and Hebrew, he became a medical student in the Friedrich-Wilhelms Institut at Berlin. In the autumn of 1843 he received his doctor's degree, the title of his thesis being "*De Rheumate præsertim Corneæ*." In this thesis he laid the foundations of his later researches on parenchymatous inflammation. Among his teachers, the man who, perhaps, exercised the greatest influence on the development of Virchow's mind was Johannes Müller, who taught pathological and comparative anatomy and physiology. In 1838, shortly before Virchow left school at Cöslin, Schleiden published his *Beiträge zur Phytogenese*, and at the very time he entered the University, Schwann's *Mikroskopische Untersuchungen über die Uebereinstimmung in der Structur und dem Wachsthum der Thiere und Pflanzen* appeared. Immediately the medical world was busy with the new cell-doctrines, and the lecture rooms resounded to exposition and criticism. Müller was one of the first to apply the new doctrines in his teaching, and the influence of Schleiden, Schwann, and Müller on the receptive mind of Virchow was great and stimulating. "No wonder," said he, in speaking of this exciting period of his student days, "that we youngsters soon learnt to think in cells."

In 1846 Virchow succeeded Robert Froriep as prosector at the Charité, and in 1847, on the failure, owing to difficulties in publication, of Traube's *Beiträgen zur experimentellen*

Pathologie und Physiologie, he, along with Benno Reinhardt, founded the *Archiv für pathologische Anatomie und Physiologie und für klinische Medizin*, with Georg Reimer as publisher. For at least fifty years of his long and laborious life, Virchow continued personally to edit this magnificent journal, which soon established for itself a world wide reputation as a storehouse of all the best work that was being done in pathology and medicine. In 1848, as a young man of mark in the medical profession of Berlin, he was, along with Barez, commissioned by the Ministry of Prussia to investigate and report upon the extent and causation of the terrible outbreak of typhus (Hungertyphus) in the highlands of Silesia. The Commission arrived at Ratebor on 22nd February, 1848. Barez returned to Berlin on the 29th of the same month, and Virchow was back on 10th March. On the 15th he communicated his observations to the Medical Society of Berlin. So impressed was Virchow by the misery of the fever-stricken populace and the inefficiency of the authorities that he became an enthusiastic political reformer and democrat, thus bringing down upon himself the wrath of the ministry and the compulsory resignation of his position in the Berlin Medical School. One trembles to think what might have been the result of this first public effort in the cause of truth and suffering human beings. But Virchow's work had been too genuine to be stopped by the most autocratic of bureaucracies, and Berlin's loss was the opportunity of Würzburg, whose University at once called him to the Chair of Pathology. He remained as Professor of Pathology in Würzburg, wisely devoting himself entirely to scientific work, from 1849 to 1856, when he was recalled to Berlin as Professor of the same subject in the University there. During his first period at Berlin, Virchow had been appointed assistant to R. Froriep, whom he afterwards succeeded, and who set him to work on the subject of phlebitis, which Cruveilhier had said dominated all pathology. As the result of his investigations, Virchow was led to several important discoveries. He elucidated the true nature of thrombosis and embolism, of inflammation of the blood-vessels, and of septic infection. He also contemporaneously with Hughes Bennett, of Edinburgh, discovered that peculiar disease of the blood which he denominated leukæmia and Hughes Bennett leucocythæmia. In his criticism of Rokitansky's *Handbook of Pathology*, Virchow dealt the death-blow to the old humoral pathology, thus proving that he was not only a great investigator, but also a great critic.

In Würzburg, Virchow devoted himself to reorganising the

medical faculty, to teaching, and to pathological research. On his return to Berlin, the Pathological Institute of that city, for practical research in pathological anatomy, physiology, and chemistry, was instituted on the same plan as that in Würzburg. As professor he was also prosector to the Charité, and here he spent the rest of his life building up the great school and pathological museum of Berlin. Almost all of his assistants rose to the first rank, and to prove this only a few names need be mentioned—von Recklinghausen, Klebs, Cohnheim, Ponfick, Orth, Grawitz, Israel, Hoppe-Seyler, Liebreich, and Salkowski.

Shortly after his return in 1858 he published his *Cellular Pathology*, a volume containing twenty lectures, which had been taken down in shorthand and revised by the author. This volume at once placed him in the front rank of the pathologists of the world, and marked an epoch in the history of medicine. All subsequent developments in pathology are founded on the facts and doctrines of the cellular pathology. In 1862 he began publishing his great work on "Tumours," which appeared in parts over a number of years, but has, we believe, never been finally completed.

Shortly after his settlement in Berlin as professor he became a member of the Municipal Council of Berlin, and in all the great undertakings of the City he was one of the leading spirits, whose advice was always sought. Berlin owes much to him; he guided the building of its hospitals, he organised the sanitary department, and he had a leading part in the introduction of pure water and efficient drainage. In fact, he was a town councillor whom our own City would have delighted to honour. In 1862 he was elected to the Prussian Chamber by three constituencies, and in 1880 he became a member of the Reichstag. In addition, "he was equally at home among Dr. Schliemann's investigations on the Troad, and in the controversy with Huxley over the Neanderthal skull, which was disposed of by his superior pathological knowledge."

Such, in brief, are a few of the points in the life-history of this great man, for which the writer is chiefly indebted to Becher's excellent "Biography" (Berlin, 1894.)

It is probably as yet too soon justly to estimate the exact value of Virchow's work, but this, at least, may with safety be predicted, that it will rank among the very best of the nineteenth century. Virchow, by his *Cellular Pathology*, did for pathology, as a whole, what Lister, by his antiseptic methods, worked out for the most part in our own Royal Infirmary, did for surgery. Both men had the genius and

insight to apply the advances which had been and were being made in microbiology to the elucidation of pathological processes, and as a necessary result to the improvement of therapeutic procedure. And both had the true nobility of mind which led them to acknowledge freely their indebtedness to the labours of the great workers in the sciences collateral to medicine—such men as Schleiden, Schwann, and Pasteur. Virchow finally led us out of the mediæval darkness of the humoral pathology, thus completing the work that had been commenced by Harvey, Morgagni, John Hunter, and Bichat. Lister, in like manner, rescued the surgeon's art from the deadly ravages of suppuration and pyæmia, and saved countless lives. There is little wonder, then, that the medical profession of the whole world has cordially united to do honour to these two distinguished men. In 1891, on his seventieth birthday, a magnificent gold medal, subscribed to all over the world, was presented to Virchow; and over the entrance to the great new hospital at Rome, opened some eight or nine years ago, side by side with a similar memorial to Morgagni, a sculptured marble records the achievement of Lister.

The magnitude of Virchow's mind, however, is not to be estimated on the basis of his medical work alone. It is given to few men—especially in these days of specialism—to be great in more than one of the many departments of human knowledge and research. Virchow was one of the few; his was a master-mind in all the multifarious labours to which he set his hand. In politics, in archæology, in public finance, in sanitary reform, and in general science, as well as in medicine, he was an acknowledged leader of the foremost rank. His genius showed itself in his enormous capacity for work, and in his tremendous versatility, which enabled him to be equally at home in the turmoil of the Prussian diet, and in the chair of its committee on finance, or in the University lecture-room and the seclusion of the laboratory. His genius was essentially sane, without one touch of the neurotic or the pathological in its constitution, a genius which remained with him unchanged and unabated throughout his long life. His judgment was clear and impartial, and never turned aside from the unbiassed consideration of facts. His one object in all his work was to arrive at the truth. Germany, in spite of the disfavour of the Court and the absence of those honours which a king alone can bestow, acknowledged him as one of her greatest sons, and rejoiced in his success; the whole world recognised him as one of the foremost men of his time. Now that he is gone his place will be difficult to fill, but the history of his

noble career and his magnificent work remains as his most enduring monument.

The writer may be permitted to close this short sketch of a great career by relating one or two personal reminiscences, and in doing so to adopt the personal style of narrative.

I first saw Virchow on the platform of St. James' Hall at the opening of the great International Congress in London in 1881. On that occasion, as the late Emperor Frederick of Germany, then Crown Prince, crossed the platform to take his seat beside the Prince of Wales, he stopped in full view of the crowded audience and warmly shook hands with the veteran pathologist. In the section of pathology, at the same meeting, I heard him criticise, in fluent English, a paper on tuberculosis by a gentleman who has since become famous, but who then was simply known as Mr. Frederick Treves, a promising young surgeon. I was present in the Circus Renz, Karlstrasse, Berlin, when on the forenoon of the 4th August, 1890, Virchow as president opened the ninth International Congress. As he rose at the reading-desk to deliver his address of welcome, his breast was seen to be covered with decorations. His voice, though strong at first, soon became feeble, but the articulation remained clear to the end. He was then closely approaching his seventieth year. He impressed me as being a slightly built, but very active old man, rather under than over the medium height; his hair and beard grey; his complexion a light parchment-like yellow; his eyes bright; and his expression genial and smiling. The veneration in which he was held by his countrymen was abundantly evident, and altogether one could not help regarding him as a lovable old man. In conversation with a distinguished neurologist of world-wide fame (Hitzig), I learned that some of his colleagues rather regretted the time he devoted to municipal and parliamentary work as detracting somewhat from his splendid scientific researches, and, in particular, as interfering with the completion of his great work on tumours. Now, however, that he has entered into his rest, I think there must be few who would have had his life ordered otherwise than it was. At the great municipal banquet in the Rathhaus, he presided over a gathering from all the ends of the earth with the geniality and enthusiasm of a young man, but it must be confessed that I trembled for his safety, when towards the close of the feast, seated in his chair, elevated on the shoulders of four stalwart Teutons, he was carried in triumphal procession round the magnificent banquetting hall. At the Congress in Rome in 1894, I had the

honour of shaking hands with him. I had the good fortune to receive a card for the King's garden party at the Quirinal Palace. Walking by himself in a temporarily deserted part of the palace grounds I descried the great pathologist, and with some hesitation I determined to address him and request the honour of shaking hands with him. With a kindly smile he listened to my request, and with a hearty "Agreed, sir, agreed," he cordially shook my hand. I saw him, for the last time, at Moscow in 1897; a little greyer, a little more bent, a little yellower, but active and vivacious as of yore. His democratic instincts and his love of justice were as strong as ever. For it is related of him on that occasion that at a dinner party of the leaders of the Congress he ventured to express the opinion that the one defect in the organisation of the meeting was the treatment accorded to the Jewish physicians. At once the table was in an uproar of protest, and one excitable gentleman ventured to shake his fist in unpleasant proximity to Virchow's face. But the man who had faced the wrath of Bismarck in many a stormy scene was not to be daunted by the wounded *amour propre* of a Russian doctor. With a polite intimation that he permitted no gentleman to shake his fist in *his* face, Virchow maintained his position, and the President, with difficulty, poured oil on the troubled waters, and restored the harmony of the meeting.

J. L. S.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—Mr. J. Graham Kerr has been appointed to the Chair of Zoology, vacant by the resignation of Professor John Young. Mr. Kerr comes to Glasgow with a brilliant record. An old student of the University of Edinburgh, he acted while there as one of the demonstrators in Practical Botany under Professor Bayley Balfour. On completing his University course, he accompanied, as naturalist, an expedition to the Gran Chaco, with the object of acquiring some knowledge of the fauna of the tropics. He subsequently graduated in Cambridge, where he has since worked at zoology. He is well known for his original work on *Lepidosiren*, the result of his expedition to South America. His experience of Cambridge methods of scientific instruction, coupled with

his knowledge of Scottish student life, mark him as peculiarly fitted for the important post which he has now come to occupy.

UNIVERSITY OF GLASGOW.—The winter session of the medical faculty commences on Thursday, 16th October.

UNIVERSITY OF GLASGOW: POST-GRADUATE INSTRUCTION IN PRACTICAL BACTERIOLOGY AND PATHOLOGICAL HISTOLOGY.—Courses in these subjects, for both graduates and senior students of medicine, will be opened in the Pathological Department of the Western Infirmary on Wednesday, 22nd inst. Each class will meet on three days a week for eight weeks. The fee for either course is three guineas; for both, five guineas.

ROYAL INFIRMARY.—Dr. John Henderson has been appointed an Extra Dispensary Physician.

ROYAL INFIRMARY.—We note that Dr. James Dunlop, of Dennistoun, has resigned his appointment at the Infirmary. Dr. Dunlop has occupied the post of Assistant Physician for the last thirteen years.

THE winter session at St. Mungo's College and the Royal Infirmary opens on Thursday, the 16th, with an address by Professor Galt, in the College at 11 o'clock.

ANDERSON'S COLLEGE MEDICAL SCHOOL.—The winter session commences on Thursday, 16th October, and an introductory address will be delivered on Friday, 17th, at 11 o'clock, by Professor Smart, of the University.

THE MEDICAL SOCIETIES.—The opening meetings of the medical societies take place on the following dates:—

Medico-Chirurgical,	Friday,	3rd October.
Pathological and Clinical,	Monday,	13th „
Obstetrical and Gynæcological,	Wednesday,	22nd „
Southern,	Thursday,	2nd „
Eastern,	Wednesday,	8th „

THE VOLUNTEERS.—Captain C. C. Fleming, M.B., D.S.O., R.A.M.C., who was recently appointed Adjutant to the Glasgow Companies of the R.A.M.C. (Vols.), has taken up duty. Captain Fleming graduated M.B. and C.M. in Edinburgh in

1888, and joined the medical service of the army in 1892. He served in the Soudan campaign, 1896-99, in which he held several responsible posts. He received the D.S.O. for his work with Sir Charles Parson's force in the action at Gadaref, and he also wears the Queen's and the Khedive's medals. He was sent to South Africa in October, 1899, at the commencement of the Boer war, and he remained there till the summer of the present year, when he was sent home in charge of twenty-five men to take part in the coronation functions. He holds the South African medal with five clasps, and will, when it is issued, be entitled to the King's medal for the same campaign. It will be seen from the above that, in their first Adjutant, the Glasgow Companies have a man with a good war record, and a practical knowledge of military medical work.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING XI.—7TH MARCH, 1902.

The President, DR. W. G. DUN, in the Chair.

ON A METHOD BY WHICH THE REFLECTING SURFACE OF A LARYNGEAL MIRROR MAY BE KEPT BRIGHT WITHOUT THE AID OF HEAT.

BY DR. WALKER DOWNIE.

You all know that when a cold mirror is breathed upon its surface is made dull by the condensation of moisture over it, and that when so affected the mirror is useless for purposes of reflection. To prevent this deposition of moisture, the laryngeal mirror is warmed before being passed into the mouth. And, when gas or oil is used as the illuminating agent, the heating of the mirror, by holding it over the flame, is simple, very convenient, eminently satisfactory, and safe—perfectly safe, so long as the examiner is careful to test the temperature of the mirror before passing it into the patient's mouth. We, however, frequently employ electric light for purposes of illumination, and as the heat given off by the

electric light is not sufficient to warm the laryngeal mirror so as to prevent its surface being dulled by the breath, another source of heat is necessary. Under those circumstances the mirror may be warmed by holding it close to a fire, over the flame of a spirit-lamp, or it may be immersed in hot water. The first two methods are not always convenient, and the last, which is the most frequently adopted, leads to the rapid destruction of the mirror.

Then if a mirror, warmed by any of the foregoing methods, be retained in the pharynx for some time, as is frequently necessary during the performance of delicate intralaryngeal operations, it becomes cold, and its surface, as a consequence, becomes dulled by deposition of condensed moisture upon it. The image is thus blurred, and this is apt to occur just when the operator requires to have the part which is being operated upon most clearly in sight.

Smearing the surface of the mirror with glycerine has been recommended to overcome this difficulty, but it interferes with the reflecting quality of the mirror so very seriously as to prove useless in practice.

Some little time ago I had my attention directed to "Lasin" or "Le crayon anti-buée." This consists of an amber-like material encased in wood like an ordinary lead pencil, and is used, I understand, by those members of the French army who wear eyeglasses, to prevent the surface of the glass becoming blurred by perspiration, &c. The glass or laryngeal mirror to be prepared should first be cleaned by rubbing with a soft cloth, then the surface is pencilled over with the crayon. The glass is again wiped or polished with a soft cloth, by which the surface is made clear and bright. It may then be breathed upon without its brightness being affected. A laryngeal mirror, after being so prepared, may be held in any part of the buccal or pharyngeal cavities, and may be retained as long as may be desired, or is ever necessary, without the reflecting surface being affected in the slightest degree by the breath-borne moisture. The crayon causes no scratching of the glass, nor does its use interfere with the cleansing or sterilising of the mirror.

Dentists will find it not only much cleaner and more convenient, but also much superior to the various soap pastes which are recommended to their notice and used by some.

When light and heat can be got from the same source, the above mentioned method is unnecessary for an ordinary laryngoscopical examination, but in many cases it will be found a useful alternative.

I have found it especially serviceable under the following circumstances:—

1. Where an examination is to be made with electric light.
2. Where a prolonged continuous use of the mirror is necessary.
3. And in the examination of children, whose timidity is so often increased by seeing the mirror held over the flame of the lamp before being used.

What I use was got direct from the makers in Paris, but, at my request, Mr. Hilliard has obtained a supply for those who desire to use it.

MEETING XII.—21ST MARCH, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—SUBCUTANEOUS INJECTION OF PARAFFIN WAX FOR THE REMOVAL OF DEFORMITIES OF THE NOSE.

BY DR. WALKER DOWNIE.

Dr. Walker Downie showed two cases in which there had been disfiguring deformities of the nose. The deformity in each case was the result of extensive syphilitic intranasal ulceration with destruction of portions of both the bony and cartilaginous framework.

The first patient was a woman, aged 26. In October, 1900, a portion of the alveolar process of the superior maxilla had become necrosed, and was discharged later. This caused flattening of the lower portion of the nose. In January, 1902, while still under constitutional treatment, the intranasal ulceration became more active, the septal support was destroyed and the nose collapsed. At the same time gummata appeared elsewhere—one at the inner canthus of the right eye, one at the angle of the right lower jaw, and one under the chin.

On 14th February last the gumma under the eye was freely excised, and the edges stitched. The wound healed by first intention and is now represented by a fine white line. The other gummata were carefully scraped, swabbed out with chromic acid solution, and they healed quickly.

On 26th February paraffin was injected into the subcutaneous tissue of the nose with the object of restoring its shape. The paraffin used was sterilised paraffin, with a melting point of 104° F., and about 2 drachms in all were injected.

The second patient was a woman, aged 41, who had contracted syphilis seventeen years ago. Five years ago, following an injury to her nose, she developed purulent rhinitis, and this was followed by necrosis of the septum and falling in of the nose. When admitted to the Western Infirmary her nose was of the "saddle-shaped" variety.

On 14th March fully 1 drachm of molten paraffin was injected into the subcutaneous tissue of the nose, and the depression so raised that that feature was not only made presentable but was well shaped.

Both patients were present and examined by members, and photographs of each patient, representing the appearance of the nose before and after operation, were shown.

II.—TWO CASES OF FRONTAL SINUSITIS.

BY DR. WALKER DOWNIE.

Dr. Walker Downie showed two cases in which he had operated for empyema of the frontal sinus. He showed them to illustrate a method, devised by him, of treating the cavity and the incision. His method is now described in the later works and new editions of works on nasal surgery.

The eyebrow having been shaved, the incision is made along the line of the supraorbital ridge, and the sinus is opened by chisel, burr, or trephine. The cavity is cleansed, and any polypi or other new growths removed. The condition of the passage to the nose is ascertained, and its patency assured. The cavity is then firmly packed with double cyanide or iodoform gauze in the form of a long narrow strip, and the free end of the packing is then passed through a small button-hole incision made in the skin close to the reflection of the upper eyelid.

The incision over the eyebrow, through which the sinus was exposed, is then closed throughout its length with silk-worm-gut, and it heals by first intention.

The packing is withdrawn, usually, in two stages—the first half about the tenth day, and the remaining portion four or five days later.

The resulting scars are practically invisible.

Of the cases shown, one had recently been operated upon, and the line of incision was readily seen on the bare skin; the other had been operated upon two years ago, and in this the eyebrow, which was again fully grown, completely hid the line of incision.

III.—CASES TREATED BY LIGHT RAYS AND HIGH-FREQUENCY CURRENTS.

BY DR. MACKINTOSH.

Dr. Mackintosh's paper will appear as an original article in a future issue of the *Journal*.

IV.—CASE OF HÆMOPHILIA.

V.—AN OVARY AND FALLOPIAN TUBE REMOVED FROM THE ABDOMEN OF A YOUNG MARRIED MAN.

BY SIR HECTOR C. CAMERON.

These two cases are to be published shortly in detail.

MEETING XIII.—4TH APRIL, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—CHRONIC SUPPURATIVE DISEASE OF THE MIDDLE EAR.

BY DR. J. KERR LOVE.

Dr. Love's paper will be found as an original article in our issues for July and August, 1902, at pp. 1 and 103.

II.—ON REMOVAL OF THE SUPERIOR ROW OF CARPAL BONES IN ACUTE SEPTIC DISEASE OF THE WRIST-JOINT.

BY DR. ALEX. MACLENNAN.

Dr. MacLennan's paper appears as an original article at p. 251.

III.—AN ACCOUNT OF AN OUTBREAK OF BUBONIC PLAGUE IN
A LARGE HOTEL IN GLASGOW.

BY DR. JOHN FERGUS.

In this paper I propose to give a short account of an outbreak of bubonic plague, which occurred in the autumn of 1901, in a large hotel in this city where I am in frequent attendance on the staff, which numbers about 300 persons. Plague was not at the time known to be existent in, or even threatening an invasion of, Scotland, and while it might be interesting to enter into speculation as to its mode of origin, and also to go into detail as to the course and treatment of the cases that occurred, and to consider the measures taken for the stamping out and the prevention of the spread of the disease, I propose to limit myself to a short description of the onset and initial clinical features of the disease as exemplified by the cases that came under my observation, and I think this may be not without interest to the general practitioner in the routine of whose practice such cases might crop up without any previous warning.

CASE I.—The first case was that of a young Frenchman, Jacques P., aged about 19, who was in this country learning the details of hotel business, and to this end was employed as clerk in the hotel manager's office, which, I may remark in passing, is situated one floor up, on the *entresol* floor and in no way connected with the basement or cellars.

On Monday, 21st October, during one of my ordinary visits to some of the staff, I was asked by the management to see the young Frenchman, who had been in bed all the previous day with what was termed a "sore leg." I found him in bed on the fifth floor, a sallow rather delicate looking youth, who complained of pain in the left thigh, and said he had been out of sorts on the Saturday, and had taken to his bed on the Sunday. His temperature was only 101·6°, but his pulse, which was rather shabby and feeble, was about 120. His principal complaint was of pain in the upper part of left thigh, but he also had some headache, and had been a little sick, with some vomiting. On examining the thigh I found an ill-defined swelling, about the size of a filbert, in the upper part of Scarpa's triangle. It was not fluctuant, and was by no means unduly tender, and there was no reddening of the skin over it.

Close questioning as to the possibility of a venereal origin

elicited most strenuous denial of any venereal infection, either recent or remote, and thorough examination of the genitalia failed to reveal any lesion that might account for the bubo in the groin. There was no history of any injury, and careful examination failed to detect the slightest abrasion on the affected limb, and there were no hacks or cuts beneath the nails or between the toes, while, in addition, the lymphatic vessels of the limb seemed quite normal and in no way swollen or painful. His socks, too, were self-coloured, so that the possibility of absorption of some dye stuff could be eliminated. The possibility of this being a case of plague suggested itself to my mind, and after prescribing some simple internal febrifuge and recommending the affected part to be painted with glycerine of belladonna and covered with cotton-wool, I saw the management of the hotel, and, without communicating my suspicions, recommended that the lad should be kept isolated. To Dr. Cumming, the official medical officer of the hotel, I conveyed my suspicion as to the nature of the case, and he quite agreed with me that it should be carefully watched.

On Tuesday, 22nd October, I saw the lad again, and he seemed so well as to make the suspicion that he was suffering from a grave disease seem almost out of the question, in fact he expressed himself as feeling "quite well." His temperature had fallen to but slightly over 100°, his pulse had fallen in frequency and was of much better character, and the pain in the swelling seemed almost in abeyance, while the swelling itself had not increased in size, so that I was almost inclined to look on the glandular swelling as possibly due to some unnoticed strain till the housekeeper of the hotel mentioned that he had seemed sharply ill the night before and had been rather restless, so that she had taken his temperature and had kept the thermometer for me to see the reading. It was 104°, but in view of the patient's markedly improved condition I was not inclined to set too much store on this, as I had no guarantee that the index had been shaken down before the observation, and it has been no uncommon experience on my part in the hotel to have almost scalding water brought to me to wash my thermometer in. Still, with the possibility of the temperature being accurate, I thought it as well to recommend that he should still be isolated that we might observe the further course of the illness.

Though the possibility of the disease being bubonic plague had crossed my mind, the absence of grave constitutional symptoms, the amelioration of the patient's symptoms, the

improbability of the disease arising in a large and popular hotel where the management was excellent, and the arrangements, both sanitary and otherwise, apparently quite satisfactory, and, above all, the fact that plague was not known to exist in Scotland or its vicinity or in any of the ships trading with Glasgow, made me very dubious as to the correct diagnosis of the disease; but my doubts were soon dispelled by the occurrence of the second case, which developed on the evening of the same day.

CASE II.—Towards midnight on the night of Tuesday, 22nd October, I was urgently called to the hotel to see one of the staff, Miss M'G., a young lady employed in the fruit-room, where her duties consisted in arranging the fruit and flowers for the dining-room. The fruit-room is situated on the ground floor of the hotel, but one has first to ascend to the *entresol* and go along a corridor and then down a stair before reaching it from the other parts of the hotel. I found this patient in bed in her bedroom on the fifth floor, and evidently seriously ill. She was lying in bed in a listless manner, retching and vomiting at intervals, and complaining of severe pain in her head, and also, as she said, "in the stomach." She was very much flushed, the face and neck being markedly so, and the conjunctivæ suffused. She was not delirious, but answered my questions in a peculiar slow scanning sort of way, which was very noticeable. I had already seen this patient some three weeks previously with well-marked gastric symptoms, which strongly suggested gastric ulcer, and as she referred her symptoms on the present occasion largely to her "stomach," I at first thought it might be a return of the previous illness. On taking her temperature, however (in the axilla), I was alarmed to find it 106.6° , while her pulse was running about 140 per minute. As she was in extreme pain I gave her a small dose of morphia hypodermically, and then had a more thorough examination of the case. There was a generalised scarlet rash, largely spread over the trunk, but more marked at the upper part and in the neck, and it also extended slightly to the arms. It was extremely like the rash of scarlet fever, and combined as it was with some complaint of sore throat and stiffness in the neck, the suspicion was aroused that this might be a case of malignant scarlet fever, but there were no spots or other condition of any importance on the tonsils or fauces, and there was no enlargement or tenderness of the cervical glands. As she referred her symptoms largely to the "stomach," an

examination of the abdomen was made, but there was little or no tenderness, either general or localised, and the areas of percussion-dulness, and resonance, seemed quite normal. While examining the abdomen for tenderness, the patient always said, "It's lower down," and on examining the groins there was found in the right one, below Poupart's ligament, an exquisitely painful glandular swelling, about the size of a small walnut. There was no swelling or tenderness of the lymphatics of the leg, there was no history of any injury or sprain, and venereal infection could be absolutely excluded. The onset of the illness had been sudden, for though feeling a little out of sorts in the morning she had gone down to her work, and it was only in the afternoon that she became so violently ill as to have to abandon it and go to bed. The tongue was only slightly furred, and clean and moist at the edges.

Taken in conjunction with the case of the French lad, and the suspicions I had of it, it seemed reasonably certain, as far as the mere clinical features of the case went, that we were dealing with a case of bubonic plague, and as the patient was alarmingly ill I recommended her immediate removal to Belvidere, and went up to Dr. Cumming's house to communicate with the hospital, and also to apprise him of the probable nature of the case.

Before leaving the hotel the assistant housekeeper innocently strengthened my suspicions, for on making enquiries from her as to the nature and conditions of the patient's work in the fruit-room, she told me that the young lady and others employed in the vicinity of that room had been complaining of an offensive smell in the room, and on my asking the assistant housekeeper what the smell was supposed to be due to, she said she believed it was dead rats, as rats appeared to have got into the hotel in large numbers from the extension works of the railway station, and were dying in tolerably large numbers. The night porter in the hall subsequently casually confirmed this, remarking that the rats were dying in such numbers that he thought some one must be poisoning them.

This second case was removed early on the morning of Wednesday, 23rd October, shortly after I saw her, to Belvidere, where she received large doses, both subcutaneously and by the intravenous method, of Yersin's serum, and within a few hours her temperature had fallen almost to normal.

While the clinical features in this case were distinct, and a tolerably complete picture of the descriptions given of bubonic plague, the bright scarlet fever-like rash was, I

understand, a rather unusual feature, and was at first rather puzzling, but it appears to have been of the nature of a septicæmic blush, due likely to the large amount of the plague poison in her system, as indicated by the very high temperature and the very grave constitutional disturbance.

On the forenoon of Wednesday, 23rd October, I saw Dr. Chalmers, the medical officer of health for the city, at the sanitary office, and told him of the suspicious cases that had occurred in the hotel, and on communicating with Belvidere hospital we found that the diagnosis of plague had been established in the case seen at the hotel the previous night, fluid drawn from the affected gland showing the bacillus pestis to be abundantly present. The diagnosis being established in this case, the young Frenchman (Case I) was sent to hospital the same day, and the remainder of the day was spent in finding out the contacts of both those cases, in visiting any of the hotel staff who were off duty from any cause, and, along with Dr. Chalmers, inspecting the basement and cellars of the hotel, and searching for rat holes and runs.

On Thursday (24th), while Dr. Chalmers was in the hotel, a message was brought to him that two doctors from the sanitary office wished to see him, and this turned out to be his two assistants (Drs. Knight and Dittmar), who had come to intimate the occurrence of another case (Case III), also an employee in the hotel, Arthur B., a cellar-man, who did not reside in the hotel, but who lived in a street on the south side, near the river and wharves, and in a rather poor district. He had left his work on the Saturday previous (the 19th) and had been ill at home since then, being attended by his own doctor, who had evidently realised the suspicious character of the case, as he communicated with the sanitary officials, and to their mind also the clinical features of the case left no doubt of its being a case of plague.

As I never saw this case, I am indebted to the sanitary officials for the history of it from notes taken by Dr. M'Connell, who attended the man and notified the case.

CASE III.—Patient employed as cellar-man in hotel. Felt out of sorts on Sunday, 20th October. On arising on Monday (21st) felt very dizzy and has kept to bed since. He had no sickness. He was very restless during the night, and on Wednesday (23rd) complained of pain in right groin. On examination, on 24th, there is a distinct swelling in the right femoral and inguinal regions. This swelling is tender to pressure, and is evidently composed of enlarged glands with

infiltration of the surrounding tissues. Temperature, 102°. Tongue heavily coated on the dorsum, red and clean on the tip and edges. Patient's speech disjointed and hesitating. He has not been working since Saturday. The house is composed of two rooms and kitchen, and is kept by the patient's mother. There are seven other children, whose ages range from 6 to 27.

This patient was admitted to Belvidere on the 24th, but, despite energetic treatment with Yersin's serum, he died within three days.

On Thursday, 24th October, having been provided with a supply of Yersin's serum by the sanitary officials, I began the prophylactic inoculation of the contacts, as far as could be ascertained, of the cases that had already occurred, and also of all the men employed in the cellars, where it was to be presumed contact with the infected rodents was most likely to occur. The number of persons thus inoculated was thirty-two, and the inoculations were perforce spread over a couple of days or so, as all the contacts were not at once discovered, and when discovered were not always available. The material used was Yersin's 1901 serum, and also to some extent Yersin's 1900 serum, as there was but a limited supply of the 1901 serum available, owing to the large quantities required for the curative inoculations of the cases under treatment at Belvidere. The quantity used for each inoculation was 10 c.c., the site of inoculation was usually the left arm below the insertion of the deltoid muscle, and strict antiseptic precautions were observed.

Without going into further detail, I may say that in many of these individuals there was a tolerably well-marked reaction, the most common symptoms being urticaria or a localised erythema, while pretty severe joint pains, or pains of a neuralgic character, were present in a considerable proportion. In some there was no elevation of temperature whatever, in only a few did it exceed 100°, and in none did it reach to over 102°.

Having inoculated, as far as could be ascertained, all the direct contacts, and those working in apparently infected places, we, so to speak, "marked time," and waited the course of events, in the hope that the incubation period might pass over without the occurrence of fresh cases, and, meanwhile, the sanitary authorities were busy taking every precaution their trained skill could suggest to detect the sources of infection and to prevent the spread of the disease. Rats

were assiduously hunted for, the whole basement and cellars became a gigantic workshop, floors and skirtings were torn up, rat-holes closed, and stringent orders issued to the staff and workmen about handling of dead rodents or other possibly infected material.

I spent the greater part of each day in the hotel, keeping a strict watch on the health of the inmates, and as the last case to be removed to hospital had been sent away from the hotel on 23rd October, by the time the 31st came round with no appearance of fresh cases we began to hope that the incubation period would terminate without any new cases cropping up, and that the outbreak would be at an end. But on the forenoon of the 31st another case occurred.

CASE IV.—Mary P., an under housemaid and scrubber, who sleeps on seventh floor, but whose work is principally scrubbing the third and fourth floors, the front hall, and hairdresser's shop. Once a week she works for about five hours in the dish-room, which is close to the fruit-room, where Case II worked, and where the smell from dead rats was well marked, and where, as a matter of fact, several dead rats had been found on the flooring being lifted. This patient has been out of sorts for a few days, but has not felt acutely ill till to-day (31st October). She feels sick, and has a headache, while her temperature is 104° , and her pulse 124. She has a painful bubonic swelling in left groin, about the size of a pigeon's egg. It is not extremely tender to the touch. Her tongue is clean at tip and edges, but furred on the dorsum. Her speech is in no way affected, she is not delirious, and there seems comparatively little constitutional derangement.

In view of the previous cases, this was diagnosed as a case of plague, and was at once sent to Belvidere, where the diagnosis was confirmed; and, in this regard, it may be well to mention here that by this time the bacillus pestis had been found in several of the dead rats which had been found in the hotel.

On the evening of the same day the directors determined to close the hotel, and I went down the same night and took up my residence there, having first taken a precautionary inoculation of 10 c.c. of Yersin's serum in the abdominal wall, which, I may mention, incidentally produced a good deal of urticaria and joint pains about six days after, but no noticeable elevation of temperature.

The next morning (1st November) the visitors all left

the hotel, and, at Dr. Chalmers' suggestion, I attended to "speed the parting guests," and to determine, if possible, from their appearance and movements and a superficial examination, if any of them showed symptoms of plague. While no cases of plague were discovered, it was an interesting study in temperaments, some being considerably excited, while others took the situation with the utmost *sang froid*.

Early the same forenoon the fifth and last case occurred, the victim in this case being a barmaid, who, while she slept in the hotel at nights, was occupied during the day at a station bar and restaurant in an adjoining town, and thus the possibility of a new focus of infection was opened up.

CASE V.—Miss K. B., employed at A—— station bar for several months. Had a rigor early yesterday morning (31st October), and felt very ill all day with severe headache. She also felt some pain in the right axilla. She looks smartly ill to-day. Eyes suffused, tongue slightly furred at centre, clean and red at edges. There is an extremely painful swelling in right axilla; this is rather indefinite in outline, and more boggy to the feel than in the other cases. No definite history of contact with infected persons or places.

This case was also at once sent to Belvidere as a case of plague, the diagnosis being again verified by bacteriological examination.

As there had been two fresh cases on two consecutive days, and the last, at anyrate, presenting no history of contact with infected places or persons, Dr. Chalmers recommended that the whole hotel staff should be inoculated, and in order to accomplish this as quickly as possible, I obtained the assistance of Dr. Webster, who had had a previous experience of plague in the 1900 outbreak.

As the stock of Yersin's serum was limited, and was being required in increasing amount for the cases under treatment at Belvidere, and as no fresh supply could be obtained from London, Liverpool, or Paris, it was determined to inoculate the remaining large proportion of the staff with Haffkine's serum, of which Dr. Chalmers had fortunately a sufficiently large stock, for being used purely as a prophylactic remedy and not as a curative agent there was no demand for it at Belvidere. The remainder of the staff, some workmen and others employed about the building, to the number of nearly three hundred, were inoculated in about two days, strict antiseptic precautions,

as before, being observed, and the site of the injection the same as for the Yersin.

Owing to some uncertainty as to the strength of the serum used, the initial doses were probably too small, being only 2.5 c.c. for adult men and proportionately less for women and younger males. The dose was afterwards increased to 4 and even 5 c.c. for adult males, but in almost none of the cases was there any very well-marked reaction. It may be well to note here that the reaction of the two serums is markedly different, especially as regards time—that from Yersin not coming on for some days afterwards, probably four, five, or six days, while the reaction with Haffkine's serum usually comes on within a few hours.

The reaction from Haffkine should, according to authorities, be pretty sharp, with well-marked elevation of temperature, and a fair amount of constitutional disturbance, as well as probable local manifestations, and it is stated that the inoculation cannot be regarded as successful unless these phenomena have taken place. In the cases under consideration it was obviously impossible that we should keep such a large number under close observation, or record frequent temperatures, while we were still busy inoculating others, but the general opinion we gathered, from the cases we were able to observe, was that there was remarkably little visible or perceptible reaction, that constitutional disturbance was in the great majority of cases either absent or but slightly marked, and that in very few cases was there much elevation of temperature, only one registering a temperature of 102° , and that was in a child. On the contrary we had in many cases quite well-marked sub-normal temperatures, 97.6° or 97.4° being not uncommon, while a few were even lower, and this was so comparatively constant that it appears as if it bore some relation to the inoculation, and that instead of getting a febrile reaction we were getting what I may term a "shock" reaction.

Without entering into further detail, I may say that none of the individuals inoculated with either of the serums developed the disease, and the outbreak closed with a total of five cases and one death.

As regards the treatment and after-history of the cases in Belvidere hospital, it is not my province to enter into that, but I may say that they came there under the able charge of Dr. Cairns, who had done good work during the outbreak in 1900. In addition to the ordinary treatment by sub-cutaneous injection of Yersin's serum, he further developed

and extended the intravenous method of injection, giving in this manner large doses, some 80 c.c. or more at a sitting, and I have to acknowledge his courtesy in letting me see his mode of procedure in one of the patients sent from the hotel.

All the patients sent direct from the hotel recovered, the only death being that of the cellarman, who lived in less sanitary surroundings on the south-side. In Case II (Miss M'G.), which in its inception appeared to be by far the most severe of the series, very large doses of serum were given by the combined method, and though she had a well-marked serum reaction and pronounced febrile disturbance her bubo did not suppurate, and she made a fairly rapid and ultimately satisfactory recovery.

In Case I (the French lad), though it appeared the mildest of all when sent to hospital, the bubo suppurated, and he had a tedious convalescence and slow recovery.

In Case V (Miss K. B.) the temperatures showed a tendency to run up even after large doses of serum, and the serum had to be pretty frequently repeated, and she ultimately recovered well without the bubo bursting.

Case IV (Mary P.) seemed a mild one, as compared with the others, and she recovered pretty rapidly.

In conclusion, I would say that the one thing, as regards treatment, that impressed itself most strongly on my mind was the marked effect of large doses of Yersin's serum in controlling the disease and in reducing the temperature. Case II had a temperature of 106.6° when seen in the hotel, and was most critically ill on admission to Belvidere, but after prompt treatment by large doses of Yersin it fell to something like 100° next day, and was always afterwards kept within reasonable limits.

In Case V, whenever the temperature tended to run up, as it did some time after the inoculation, it was invariably brought down from about 104° to very reasonable limits by a fresh dose of the serum; so that from my limited experience of this outbreak, I am led to believe that, though formidable and fulminant in its inception, the disease, as seen in this country at anyrate, seems to be tolerably amenable to large doses of Yersin's serum, especially if given by the combined intravenous and subcutaneous methods.

MEETING XIV.—18TH APRIL, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—TWO INFANTS WITH GREAT ENLARGEMENT OF THE SPLEEN AND ANÆMIA.

BY DR. GEO. S. MIDDLETON.

CASE I.—Daniel K., æt. 15 months, was admitted on 27th March, 1902, on account of abdominal swelling. The child had been regarded as healthy, having had no illness, with the exception of measles. He had always been pale, and the belly had been rather prominent. He was brought up on the bottle, but had suffered from neither sickness nor vomiting.

The child presents evidences of rickets, but not marked. Anæmia is very pronounced, the pallor being of the sallow type; and the spleen is greatly enlarged, reaching down to just below the umbilicus, and to the right of the middle line. There is nothing abnormal in the heart or lungs, and no albuminuria. The liver is just tangible in the abdomen. The blood shows 60 per cent of hæmoglobin, and the red corpuscles number 76 per cent of the normal. The temperatures have been normal.

CASE II.—Annie M'N., æt. 1 year and 9 months, was admitted on 22nd January, suffering from pronounced anæmia and great abdominal swelling. She is very rickety, and there has been no attempt even to creep. The chief feature of the case is the very great enlargement of the spleen, which can be felt almost down to the left anterior iliac spine. It is easily movable between the hands placed in front and behind. The anterior edge is sharp, and a notch is felt below the costal arch. The lower border of the liver is also palpable in the abdomen. The anæmia is well marked, though there is generally a pink flush on the cheeks, and it seems to depend rather on diminution of the hæmoglobin than on loss of red corpuscles, although the latter are undoubtedly below par. Dr. Ferguson, in February, kindly examined films, and reported as follows:—

“I am unable to discover in the blood films any abnormal features in the leucocytes present. I do not consider that

there can be any leucocytosis; if anything, they have appeared to me diminished in the films. The red corpuscles, however, show irregularities in size, form, and depth of staining—moderate general poikilocytosis. In addition, nucleated red corpuscles are present of both varieties—normoblastic and megaloblastic. Nucleated red cells, however, are not very numerous. The general features are thus more in accordance with those of a pernicious anæmia.”

She has been treated by arsenic, which has frequently had to be discontinued on account of sickness, and also because of rise of temperature, the latter apparently bearing out Lancereaux's views as to the occurrence of arsenical fever during the administration of that drug in medicinal doses.

These two cases both present evidences of rickets, but I do not regard that disease as the cause of the enlarged spleen and the anæmia. Though the spleen is often enlarged in rickets, the enlargement, in my experience, is never so great as it is in these infants. So, also, the anæmia is more pronounced than the anæmia of rickets. I conclude, therefore, that we are justified in describing these as cases of splenic anæmia.

II.—INFANT WITH GREAT ENLARGEMENT OF THE LIVER AND ASCITES.

BY DR. GEO. S. MIDDLETON.

Maggie R. was first admitted in the beginning of June of last year, when she was 15 months of age. The complaint was swelling of the abdomen, which was first noted on 1st June, but had probably been present earlier. She was reputed to have been quite a healthy baby until 1st June, when she was dull and heavy-looking. She was still at the breast, although she was getting other food as well.

On admission, she was well-nourished, but pale. The abdomen evidently contained a considerable quantity of fluid. The liver was enlarged. The superficial veins of the abdomen were greatly distended. The child suffered no pain; temperatures were practically normal. She was discharged on 13th June, and readmitted on 27th June in a much worse condition.

The further history of the case may be briefly stated as one of progressive emaciation, with increase in the abdominal swelling, and gradual but progressive increase in size of the liver. The abdominal distension has necessitated paracentesis,

which has been performed on twenty-two occasions, the total amount of fluid removed being 809 oz., or 40 pints. The child has borne the tapplings very well. Repeated examinations after tapping have demonstrated that the liver is uniformly enlarged, that its surface is rough, that its edge is thick and hard, and that the notch is well developed. Perhaps the right lobe is more enlarged than the left. On no occasion has the spleen been felt. Œdema of the legs has never been a prominent feature, and has always disappeared after tapping. Evidence of effusion into the pleural cavities has at times been present, more especially on the right side, but such fluid has never required mechanical removal.

Throughout the whole course of the illness the temperatures have tended to be slightly febrile; they have rarely exceeded 100° F., except for a period at the end of October when they daily reached 102° F.

Within the past six weeks there has been a very notable improvement, the extreme emaciation has disappeared, and, although the child is by no means plump, she looks so to those who were familiar with her previous condition.

The only treatment in addition to feeding and tapping has been, first of all, grey powder, in view of a specific cause, but that had no good effect; and, secondly, Basham's diuretic iron mixture, which was commenced in the middle of January. Throughout the greater portion of her illness she has taken food fairly well, although there was a period towards the end of last year when difficulty was experienced in feeding her.

The bowels have never been very loose, but at times there has been a little diarrhœa. No information could be obtained from the mother that would throw light on the cause. There is an alcoholic history on the part of the father, but there is nothing in the history of the mother to suggest syphilis, and the mother denies having been guilty of giving the child stimulants. There is nothing in the heart to account for the hepatic enlargement.

Such a liver might readily be due to congenital syphilis, but there is no evidence to support such a diagnosis, and mercurial treatment proved quite unsuccessful.

There is nothing in the history to suggest cirrhosis of the liver, and the absence of jaundice is against this being an instance of the hypertrophic form that occurs in infancy.

The case is comparable to one described by Dr. Musser in Keating's *Cyclopedia of the Diseases of Children* (vol. iii, p. 433), as an illustration of a passive congestion of the liver

without any apparent cause. That case died, and the *post-mortem* examination failed to discover anything beyond passive congestion.

III.—CHILD WITH A CARDIAC AFFECTION, THE NATURE AND CAUSATION OF WHICH ARE IN DOUBT.

BY DR. GEO. S. MIDDLETON.

This boy, *æt.* 8 years, was taken to the Dispensary on account of diarrhœa, when Dr. Hunter discovered that he was the subject of a cardiac affection, the origin of which cannot be determined. He was a healthy baby during his first year of life, but in his second he was ailing in some indefinite way, attributed to teething. Thereafter, with the exception of measles and whooping-cough, he remained well until about a year and a half ago, when he took influenza, and the doctor who then attended him discovered a cardiac affection. He has never had any rheumatic attack, but he has occasionally complained of growing pains. He has always been able to play about with other children, and no history of cardiac symptoms can be obtained, except that occasionally his face has been noticed to be somewhat blue. There is no history of rheumatism in the family, and there is no evidence of articular deformity or of fibrous nodules in the boy.

There is a good deal of impulse over the precordium, but no thrill. The impulse is felt in the third, fourth, and fifth interspaces, most marked in the fourth, just about the nipple. The cardiac dulness has its left border in the nipple line, its upper border in the second interspace, and its right border an inch to the right of the middle line.

Over the precordium there is audible a loud blowing V.S. murmur, which has its maximum intensity in the tricuspid area. It is barely audible at the apex, but is well heard at the aortic and pulmonic cartilages. It is not specially well heard at the pulmonic cartilage, and it is not conveyed towards the middle of the left clavicle. There is nothing abnormal in the lungs. Urine is of normal characters.

The centre of greatest intensity of the murmur suggests that it is due to tricuspid regurgitation, but the area of distribution is not that of the tricuspid murmur. Moreover, there is no history of chronic bronchitis or other disease liable to cause insufficiency of the tricuspid valve.

There is no history of rheumatism, or of any of the diseases

associated with rheumatism liable to be accompanied with endocarditis; the history of growing pain, even, is not such as to warrant the assumption that that name had been assigned to a mild rheumatic attack. Besides, the distribution of the murmur is not such as one gets with a rheumatic valvular affection.

The only other explanation that occurs to me is that the murmur may be due to a congenital defect, either at the foramen ovale or at the interventricular septum. There is nothing in the history to point to this; cyanosis is not a marked feature of the case, though it is present; there is no clubbing of the finger tips; and the murmur is not conveyed towards the left clavicle as murmurs from congenital disease generally are.

I cannot offer a positive diagnosis, therefore, but I am inclined to regard the diagnosis of a congenital lesion of the interventricular septum as probably correct.

IV.—CHILD WITH A NERVOUS AFFECTION CHIEFLY CHARACTERISED BY TREMORS.

BY DR. GEO. S. MIDDLETON.

This boy, *æt.* 11 years, was admitted on 24th March, 1902, suffering from general tremors of the arms and legs. Up till the 17th July last he had been in good health, with the exception of an indefinite illness in May, which was supposed to be enteric fever, and which had been followed by headaches, relieved by the wearing of spectacles obtained at the Eye Infirmary. On 17th July he received a great fright, and on the 18th he developed "fits"—these affected both arms and both legs, but the face only to the extent of protrusion of the tongue. They lasted from five to ten minutes at a time, and occurred about every half hour. They ceased after a few days, but they were followed by the tremors now present.

On his admission these tremors were very pronounced, and affected the legs as much as the arms, so that walking was greatly impaired. They ceased during sleep. The tremors were of small oscillation, and of about the frequency of ankle-clonus. In the hands they interfered with his handwriting, but he was able to feed and dress himself. In the feet and legs they prevented his standing steadily with the feet close together, and were such that he could hardly walk up a stair. They were not associated with any paralysis, rigidity, or atrophy. The knee-jerks were much exaggerated, but there was no

ankle-clonus. Superficial plantar reflexes were active. There was no evidence of affection of sensation. There was no grimacing action, but the tongue on protrusion was very tremulous. Intelligence seemed perfect. Since his admission the faradic current has been applied daily to his spine and limbs, and there is now considerably less tremor than on admission; this is specially true of the legs. He has great difficulty in going down a stair; he places his hands on the wall, and carefully lifts first the one foot and then the other down to the next step.

Tremors are not common among the diseases of childhood, and this case does not present the characteristics of any of the types frequently met with in adults. It is difficult, therefore, to refer it to any of the well-known forms of disease.

The fact that they were preceded by fits referred to a fright, at once suggests a hysterical origin, and it may be that they are of that nature. But the history of what was regarded as an attack of enteric fever may have a considerable bearing on the diagnosis, for it is a well established fact that various disorders of the nervous system occur as sequelæ of the continued fevers, some cases of which have come under my own notice. It may be, then, that this is a case of spinal lesion, and that the fright was simply the exciting cause of the onset of the symptoms at that particular moment. If that is so, it is probably of the nature of disseminated sclerosis, though the tremors at present are not of the kind generally met with in that disease. The fact that he is showing some improvement is not at all against that view, for in most such cases there are periods during which the symptoms become less marked, to be followed by others when the disease again progresses.

V.—CASE OF MOVABLE LIVER WITH GREATLY DISTENDED GALL-BLADDER, RELIEVED BY CHOLECYSTOSTOMY.

By DR. DAVID NEWMAN.

The patient, Mrs. E., aged 50 years, was admitted to the Glasgow Royal Infirmary on 20th March, 1902. According to her own statement, she enjoyed good health up till six years ago. About that time she began to feel pains in the back and in the right lumbar region. These pains gradually became worse, and compelled her about a week after their onset to take to bed, to which she was confined for eight weeks.

While more or less constantly present the pain varied in intensity, being most severe when the patient was moving about. Even when most severe, sickness, vomiting, or rigors were not induced, and she said that, although very severe, it was not so great as those pains she experienced during labour. Sudden movements of the body, she stated, gave her a feeling as if there was a bag of marbles in her right loin. At no time had she symptoms of jaundice. The medical attendant who examined her said she had a "watery tumour in the right side," but the patient herself could not feel the swelling. At this time she noticed a variation in the quantity of her urine, and also in the colour. After being in bed for four weeks, the pain gradually passed off, but she did not know whether the "tumour" noticed by the doctor disappeared or not. During the next three years she had three attacks very similar in nature, one of them causing her to lie up in bed for eight or ten weeks. During the interval between the attacks there was a complete disappearance of the symptoms, but on each occasion a swelling was made out in the right loin, and in each of the attacks the patient noticed that at the onset she passed very little urine, and when she was recovering she passed an unusually large quantity. As far as could be ascertained there never was any pain resembling renal colic. The last attack, which occurred four years ago, was regarded by her medical attendant to be due to a uterine disorder. Since recovering from that illness the patient enjoyed good health until a month ago, when she began again to feel a dull pain in the right loin, which was more or less constantly present. In the beginning of March she noticed that she was passing very little urine, and the pain becoming more severe, she was compelled to take to bed. On the 9th of March vomiting commenced, and continued more or less until the 16th. On that date the material she vomited she described as like cocoa. There was no pain in the stomach at this time, although the patient said there was a distinct feeling of distension of the abdomen. The evacuations were normal. On the 16th of March the patient, for the first time during this attack, noticed a swelling upon the right side of the abdomen. This swelling was so prominent that it led her medical attendant to suspect the presence of an ovarian tumour, and with this idea in view the patient was sent into the wards of my colleague, Dr. Kelly.

On examining the case, he came to the opinion that it was not ovarian nor uterine in its origin, and, consequently, the patient was transferred to the surgical wards.

On admission the patient was found to be a well-nourished, moderately stout woman. The abdominal wall was, however, very flaccid, and on palpation a hard, freely movable mass could be made out, occupying the right side of the abdomen, the pivot of rotation corresponding to a point where the nipple line crosses the right costal cartilages. On percussion over the swelling a dull note was elicited, and the dullness was found to be continuous with the liver dullness. The dull area extended downwards to the crest of the right ilium and forwards to the umbilicus. The swelling was tender on pressure. It could be moved considerably to the left of the middle line, and while the posterior portion appeared to be solid, the anterior part was fluctuant. The swelling was smooth and uniform, and only at the lowermost limit could anything like a distinct edge be detected; to the right the margin was soft and rounded. There was no œdema, and there was no ascites. The urine was dark amber in colour; specific gravity, 1026; acid; no albumen, blood, pus or sugar, and no tube-casts.

25th March, 1902.—To-day I made a careful examination while the patient was under the influence of chloroform, and having eliminated the possibility of ovarian, uterine, or renal tumours, but without being certain as to the precise nature of the lesion we had to deal with, I resolved to open the abdomen in front, along the line of the linea semilunaris. On opening the peritoneum the gall-bladder was found to be enormously distended, and its walls considerably thickened. A careful examination was made of the contents of the abdomen, and the only abnormality discovered, beyond the condition of the gall-bladder, was that the liver was freely movable upwards, downwards, and to the left. The gall-ducts were explored with the finger, and although considerably distended no impacted calculus could be discovered. The gall-bladder was then stitched to the muscular parietes, and when the suturing was completed, an incision was made into the sac. Fully 30 ozs. of straw-coloured, highly viscid fluid escaped, and floating in it were a large number of minute gall-stones, most of them not larger than a barleycorn, a few as large as a lentil seed. The gall-bladder having been completely washed out with sterilised water, a sound was passed, and no more biliary calculi could be found. A large drainage-tube was inserted into the gall-bladder, and dressings applied.

The patient made an excellent recovery, and is now (29th April) well, with the exception of a small fistulous opening through which small quantities of bile escape.

VI.—CASE OF MALIGNANT STRICTURE OF THE OESOPHAGUS IN WHICH GASTROSTOMY WAS SUCCESSFULLY PERFORMED; ULTIMATELY PERFORATION INTO THE RIGHT LUNG, AND DEATH FROM PULMONARY COMPLICATIONS: SECONDARY GROWTH IN THE STOMACH.

DESCRIBED BY DR. DAVID NEWMAN.

SPECIMENS SHOWN BY DR. HUGH M'LAREN.

T. S., aged 46, was transferred from Dr. Middleton's ward on 13th February, 1902. According to his account, the present illness commenced five months prior to admission. At this time his work appeared to him to be unusually heavy. He began to get weak, and he stated that he lost 3 stones in weight since his illness commenced. At the beginning of this year he went to bed for ten days, and he believed that he felt much stronger after the rest. From that time until 23rd January the patient continued at his work, but after that he had to take to bed on account of weakness, accompanied by a sense of fulness in the stomach. He occasionally vomited his food quite undigested, sometimes immediately after taking it, and at other times half an hour after the meal. He never suffered pain either before, during, or after meals. There was no history of hæmatemesis. The appetite was very poor, and thirst excessive.

The condition on admission to surgical ward.—The patient was emaciated, and had a sallow complexion; the pupils were equal, and responded to light, and on accommodation; the tongue was dry and furred. The abdomen was flat, there was no tenderness on palpation over any part of it, and percussion was normal. The gastric crescent was somewhat enlarged, and succussion could not be elicited; hepatic dulness normal. No abdominal tumour or thickening could be detected, except an increased resistance a little to the left of the middle line, close to the ensiform cartilage. Heart, liver, and kidneys normal. Respirations numbered 20 per minute. In front, the percussion note was normal, but, at the right nipple region the respiratory murmur was accompanied by a piping râle; otherwise, the front of the chest revealed nothing abnormal. Examined from behind, nothing definite could be made out, although the auscultation percussion was not quite satisfactory. There was a slight mucous expectoration.

On 5th February the patient was re-examined, and, at the base of the right lung the respiratory murmur was found to be feeble and accompanied by coarse, moist râles.

On 4th February Dr. Middleton passed an œsophageal bougie, and found that an obstruction existed $14\frac{1}{2}$ inches from the teeth, and a distinct pulsation was observed in the bougie when it was resting against the obstruction. The patient vomited a little, but no blood was detected.

5th February, 1902.—The patient spat up a little brownish gelatinous material, and the same kind of fluid was brought up through a hollow tube passed into the gullet. This fluid gave the reaction for blood, but, on microscopic examination, Dr. Middleton failed to detect any blood corpuscles. Under the microscope, it had the appearance of sputum with large round cells with pus corpuscles, also oil globules.

On 6th February I was asked to see the patient, and found by auscultation over the spine that there was an obstruction to the flow of fluid a little below the level of the bifurcation of the trachea, and, on passing the bougie, an obstruction was met with 14 inches from the teeth. No evidence of a tumour or aneurysm pressing upon the œsophagus could be made out, and the case was regarded as one of malignant stricture. As the patient was extremely weak, it was decided to feed him *per rectum*, and, if his strength improved, to perform gastrostomy at a later date. There was considerable regurgitation of food, and apparently only a small portion of what was taken reached the stomach. The patient was transferred to the surgical ward, and, during the first ten days, he seemed to gain strength by artificial feeding.

On 17th February I performed the first stage of gastrostomy, and, five days later, opened the stomach. In the first stage of the operation, the abdominal parietes were opened without dividing any strands of muscle, the muscular fibres being separated by retractors, and in this way a complete sphincter action was procured. After the stomach was opened, the tube was introduced, and the patient received fluid nourishment through it.

28th February.—Up till the present time the patient has gained strength rapidly, but to-day he looked cyanosed, and the sputum became more copious, and had a very bad odour. The lungs were examined again, and at the right base, up to the level of the inferior angle of the scapula, dulness was revealed on percussion, and numerous subcrepitant râles were heard all over the right base, but most distinctly at a spot behind the spine and the inferior angle of the scapula. Up till the present the patient retained food taken through the gastrostomal wound, and almost no regurgitation was observed, unless just immediately after the tube was withdrawn.

4th March.—Since last note the patient became steadily

worse, the cyanosis increased, and he had great difficulty in respiration, but there was no very great increase in the area of dull percussion over the right lung. He died this morning.

This case is of considerable interest from a pathological, as well as a clinical, point of view. In my monograph on *Malignant Diseases of the Throat and Nose*, p. 48, I mention a case of epithelioma of the gullet at the level of the bifurcation of the trachea, where gastrostomy was performed, followed by perforation of the trachea by the tumour, bronchitis, and death from collapse; and at p. 51 will be found a table showing the statistics of 566 cases of carcinoma of the œsophagus, with the following results respecting the cause of death:—

Collapse and exhaustion,	390
Inflammation of the lungs, including gangrene,	91
Pleurisy,	53
Peritonitis,	17
Perforation into the heart and blood-vessels,	15
	<hr/>
	566

One cannot be too careful in the employment of bougies in cases of persistent difficulty in swallowing, and especially if there is evidence on auscultation that the obstruction is about the level of the bifurcation of the trachea, on account of the danger of causing injury to the trachea or aorta; also, the possibility of the obstruction being due to an aneurysm pressing upon the œsophagus.

In 510 cases which I have collected, in only 445 instances is the exact portion of the gullet primarily attacked stated, as shown in the following table:—

Upper third,	227 equal to 51 per cent.
Middle third,	98 " 22 "
Lower third,	120 " 27 "

As a matter of observation, it is found that malignant disease attacks the œsophagus at the points where there is the greatest resistance to the passage of food, namely, the level of the cricoid cartilage, the bifurcation of the trachea, and the entrance to the stomach. The two former are influenced by the movements of respiration and by the pressure of adjacent parts, while the latter is anatomically narrower during life, although not markedly so in the cadaver.

In the case above described, prior to operation there was no clear evidence of the perforation having taken place, although, in conversation with Dr. Middleton, I find that he had a

suspicion that there might be some leakage through the ulcerated surface.

This is the nineteenth case in which I have performed gastrostomy, and in only two of these has perforation occurred into the trachea or lungs. To foresee such a misfortune is difficult. Of the cases operated upon, the average duration of life, after complete dysphagia was established, has been nine and a half months; the longest, twenty-three months.

Specimens shown by Dr. Hugh M'Laren.—The specimens which I wish to bring under your notice are the œsophagus, stomach, and lungs. None of the other organs from this case presented anything worthy of note. There is a growth in the œsophagus, about $\frac{1}{2}$ inches from the cardiac orifice of the stomach. The growth encircles the tube and extends upwards for about an inch. It has ulcerated, but the ulceration is very superficial, except on the anterior portion of the wall, where the ulceration has extended through the wall of the œsophagus into the right lung.

The œsophagus is not dilated above the tumour.

The lymphatic glands in the neighbourhood are enlarged.

There is a superficial ulcer, about the size of a five-shilling piece, on the anterior wall of the stomach, close to the cardiac orifice and lesser curvature. At the site of the ulcer the wall is thickened and indurated.

I have examined sections from these growths, and I have placed sections under microscopes for your inspection. In both growths the normal tissue is replaced by masses of flat epithelial cells, which are separated by narrow bands of connective-tissue. The masses are, for the most part, elongated, but many of them are round. Both tumours are flat-celled epitheliomas, and I am of the opinion that the stomach tumour is secondary to the œsophageal growth. Probably a cell or cells have been carried from the œsophageal tumour and planted on the stomach wall.

The posterior half of the right lung is consolidated, and of a greyish colour. At the upper part of the lower lobe there is a cavity about the size of a Tangerine orange. The wall of the cavity is ragged and dirty, and has a gangrenous appearance.

Sections cut from the wall of the cavity show that the tissue on the wall is necrosed. Throughout the consolidated area the alveoli are filled with leucocytes and catarrhal cells. At many places there are localised collections of leucocytes, probably abscesses forming.

MEETING XV.—2ND MAY, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—CASE OF MULTIPLE HYPERTROPHY OF THE SEBACEOUS GLANDS OF THE FACE IN A CONGENITAL EPILEPTIC.

By DR. W. A. PARKER AND DR. J. WYLLIE NICOL.

Dr. Parker gave the following history of the case:—

A. H., female, aged 16½ years. Physically, is well nourished, and enjoys good health. Menstruation is normal and regular. Sight is good. Sensation and reflexes are normal as far as can be tested. Palate is flat, teeth are crowded and badly placed, and there is maldevelopment of the right hand and foot.

Mentally, patient is a mere animal, swayed only by likes and dislikes. She fawns when warm and well fed and indulged, but her violent and irritable temper shows itself at once if she is thwarted in the least degree. Her intelligence is very limited. She has been unable to learn to count even her own fingers or to know the alphabet. She has but the simplest and most rudimentary ideas of the value of money. Memory is poor, probably from her inability to fix her attention, which is distracted by the merest trifles. Her weight and habit of screaming make it difficult to control her. She tends to be destructive, and, like many of her class, is fond of playing with fire.

Personal history (from mother).—Born January, 1886. A bright and healthy child till 3 years of age. Without known cause she then had a "fit," in which she remained unconscious for thirteen hours, with twitchings during that time all over her body. For some months after this she could not see with the right eye, and for eight weeks there were twitchings of the right side, most marked about the mouth. Since then the patient has never been a week—and hardly a day—without a fit, generally slight in character, and since then the growth of the right side has differed from the left. The facial eruption was first noticed at the age of 6 years.

On 2nd April, 1900, at 14½ years of age, patient was admitted to Gartloch Asylum. She was getting beyond home care, being very self-willed and bad-tempered, and fond of destruction and of playing with fire. On admission the facial

condition was noticed, but not diagnosed. It was ascribed to irritation from a habit patient had of rubbing her face on the carpet (the floor is her favourite seat). Her fits since admission have averaged four a month. They are most commonly of the *petit mal* variety, and are often followed by aimless restless movements, such as scratching her neck, pulling the blankets up and down, or crawling below the beds.

Family history (from mother).—Patient is an illegitimate child. Nothing is known of her father. Patient's mother, by her first husband, before patient's birth, had a miscarriage, and then three living children, of whom one is alive and well. One died at 3 of "teething," and one at 19 of phthisis. Next came patient by an unknown father. Since then patient's mother has married again, and has by her second husband a healthy child of 9 years of age. No miscarriages. Patient's mother was the eldest of a family of three. She was born out of wedlock. The other two are alive and well. Their parents were healthy, sober, and lived long, but, as informant was brought up away from them, she can give no further particulars.

The eruption was first noticed at 6 years of age, that is, ten years ago. The face always became very red in spring. In September of 1900, March, 1901, and March, 1902, patient scratched and rubbed her face till it was sore and bleeding. In September, 1900, and March, 1901, it was the right cheek and right forehead that suffered most. In March, 1902, it was mainly the left cheek. Since admission the patient has from time to time shown a tendency to rub the face, but apparently rather as a bad habit than from any real discomfort. For some weeks now there has been no surface irritation present.

The eruption is almost perfectly symmetrical. The parts affected are nose, nasolabial folds, cheeks, and chin. It consists of numerous small nodules, about sago-grain size. They are roundish, firm to the touch, and insensitive. They are closely aggregated, especially on the nasolabial folds, and tend to become confluent on the nose. On the chin they are fewer, and along with them are numbers of tiny flat papules. Telangiectasis is very marked, both in connection with the nodules and where there are none. It gives the nodules a bright crimson colour. On the nasolabial folds, when the skin is slightly stretched, they have a waxy, somewhat translucent appearance. The nodules are smooth on the surface, and the mouths of the follicles are distinctly seen. On the nose the usual sebaceous plug can be expressed sometimes.

Numbers of the nodules were pricked, but nothing suggesting a collection of sebum could be squeezed out. There are no nodules on the forehead, but there are a few acne indurations. On the cheeks are some comedones. Above the inner end of the right eyebrow is a patch of raised skin, about an inch long and half an inch broad. It is smooth, and firmer to the touch than normal skin. Below the right eye is a similar smaller one. At these two situations the epidermis is known to have been broken and kept from healing for a long time by scratching.

There are numbers of soft fibromata on the patient's back, and one pigmented mole. There is no evidence of seborrhœa on the scalp.

Drugs and treatment.—Patient (according to her mother) had medicine for "fits," but never steadily or for any length of time, and I am sure her mother could never have given her any medicine regularly with a taste such as bromide of potassium. In the asylum she has had no drug treatment for her fits. Her facial condition has not been treated except during periods of inflammation due to rubbing or scratching.

Dr. Wyllie Nicol—A piece of skin was recently excised by Dr. Parker from the left nasolabial fold. It has been prepared by Dr. Mary B. Hannay, pathologist at Gartloch Asylum.

I find the following features present on microscopic examination:—The epidermis is distinctly thickened, and its interpapillary processes are enlarged. There is a decided increase of the connective tissue in the papillary layer of the corium, and it is greatest at a point which apparently corresponds with the centre of a nodule. There are areas of cell infiltration in the neighbourhood of some of the capillaries. The capillaries are very numerous and dilated, some of them widely. The sebaceous gland tissue seems to occupy a greater area than usual, indicating enlargement of some of the glands. Except in this increase in size, there is no deviation from the normal in the structure of these glands, nor is there any increase in their number. The ducts are not unusually dilated for this site, and there is no evidence of a collection of sebum. The elastic tissue, lanugo hairs, cutaneous muscles, and sweat-glands are normal.

The eruption in this case was first recognised by Dr. Oswald as being similar to that described under the term "adenoma sebaceum." It certainly belongs to one of the groups so described. Cases differing widely from one another are discussed under this name, but it is very doubtful if the

term "adenoma" should be applied to most of them. In the group to which this case belongs, the character of the eruption, its appearance at an early age, its association with the low type of mental development, and the presence of other skin abnormalities, are all features usually present. The glands are described as hypertrophied. For some of them, Unna considers the definition "multiple, circumscribed hypertrophy of the sebaceous glands," the correct one. Unna reserves the name adenoma for "benign, tumour-like growths of irregular formation, proceeding from the epithelium of the sebaceous glands in whose outgrowths fatty but no colloid metamorphosis takes place." One such case has been recorded by Bock in *Virchow's Archives*, 1880, vol. lxxxi.

In the case before us, there is nothing in the structure of the glands to justify its being called an adenoma sebaceum. To avoid the use of this term, and yet, at the same time, to suggest to you the class to which it belongs, we have spoken of it as a multiple hypertrophy of the sebaceous glands. It is by no means a satisfactory name for the condition, because, as a matter of fact, the glandular hypertrophy is not very marked, and the connective tissue change seems quite as important. It must be frankly admitted that it is always difficult, except when the enlargement is great, to say when any one sebaceous gland is hypertrophied. It is especially difficult to do so in the nasolabial fold, where they are normally very large and complex, with acini varying greatly in number and size. In this case, the glands only share in the formation of the nodules. These are mainly formed by the overgrowth of the connective tissue in the corium, and the thickening of the epidermis, along with the vascular hypertrophy.

The raised patches on the brow and under the eye have not been examined, but they suggest an increase of the connective tissue.

Dr. Oswald congratulated the Society on the first appearance of a lunatic at one of its meetings. When at Gartloch, his attention was drawn to the nature of the eruption through reading an account of the appearances in two cases of adenoma sebaceum, or so-called "butterfly" disease, in the *Journal of Mental Science*. He understood that the affection was not a common one, there being only about twenty recorded cases. He must admit that his chief interest in the case lay with the probable cause, and he was sorry Dr. Nicol had not been able to say something about that. Was it possible that the toxic

influences, supposed to play an important part in epilepsy, could have something to do with the production of such an eruption?

Dr. Wyllie Nicol regretted that he was unable to say what the cause was. The suggestion of *Dr. Oswald* might gain some support from the similarity in certain points between the naked-eye and microscopic appearances in this case and those in an early stage of rhinophyma. In rhinophyma, a toxæmia was frequently associated with the other causes. The feeling is that, although not usually observed at birth, the present affection is congenital, and should be classed amongst the nævi.

II.—SYMPHYSIOTOMY: REPORT OF A CASE OF CONTRACTED PELVIS AND PREGNANCY, TERMINATED AT FULL TIME BY SYMPHYSIOTOMY.

By *DR. W. G. DUN* AND *DR. A. W. RUSSELL*.

Drs. Dun and Russell's paper will be found as an original article in our issue for September, 1902, at p. 180.

III.—THYROGLOSSAL DUCT CYST.

By *DR. G. H. EDINGTON*.

Dr. Edington showed a specimen of a tubular cyst with dilated lower extremity, removed from the subcutaneous region of the neck of a lad, æt. 17. It was said to have appeared two years previously, after ulceration of the mouth.

Microscopic examination was made by *Dr. Teacher*. The dilated lower end proved to be a chronic abscess not connected with lumen of tube. The tubular portion was lined with epithelium—in parts, columnar ciliated.

REVIEWS.

Medical Jurisprudence, Toxicology, and Public Health. By *JOHN GLAISTER, M.D.* Edinburgh: E. & S. Livingstone. 1902.

THE publication of Professor Glaister's work marks a new era in the literature of forensic medicine, and it is not too much to say that it is one of the best text-books on the subject

in the English language. The author has been able to free himself from old and often mistaken traditions on the subject, and present his readers with a work which is at once original, accurate, and carefully thought out. Dr. Glaister has had inestimable advantages in preparing a work of this kind; his long experience as District Police Surgeon, and latterly as Medico-legal Examiner for the Crown, has enabled him to bring a wealth of personal observation to bear which, by the manner in which it is applied, raises the book to a very high level indeed.

In its general get-up the work reflects great credit upon the publishers, who have ably seconded the efforts of the author. The paper and printing are alike excellent, and the illustrations, as a whole, well executed.

The arrangement of the subject matter by the author is, perhaps, the best that could have been followed in a subject of such protean aspect as medical jurisprudence.

The first chapter in the book will prove of the very greatest value to all practitioners of law and medicine, and is unsurpassed, in any other work on the subject, for conciseness, clearness, and completeness. The same remarks apply to Chapter II, although this chapter appeals to the medical profession only. Chapter III, on personal identity, is also very thorough and complete, although perhaps rather greater prominence has been given to the finger-print method of identification than is warranted by the actual results in practice, recent cases showing that it is possible to greatly exaggerate the value of finger impressions as a means of identity. The next chapter, on the identity of the dead, is excellent as far as it goes, although the part dealing with the question of mistaken identity seems worthy of more elaboration, and in any case requires rearrangement, as a considerable portion is taken up with instances of true identity. Chapter V, on death in its medico-legal relations, is wholly excellent.

The chapter following—on the law as to death certification—is a particularly well written one, and will be very useful as a guide to the practitioner in determining when a death certificate should not be granted. This is a point of great importance, as medical men occasionally grant such a certificate without definite knowledge of the cause of death, the *post-mortem* examination often showing the certificate to be misleading. Chapters VII, VIII, and IX deal with the medico-legal forms of death, and are particularly instructive from the number of selected cases which illustrate the sections. A curious composition error is noticed in line 3 from bottom

of page 136. In lesions from burns it is properly emphasised that the danger to life is very great when at least one-third of the surface of the body is involved. Chapter X, on wounds in their medico-legal relations, would of itself suffice to place the work on the very highest level; it is copious, carefully written, clear, and convincing. The illustrations in this section add very materially to the value of the text. Chapter XI, dealing with blood stains, is almost as good as the previous chapter, the illustrations being again a prominent feature. It is to be noted, however, that the lamprey forms an exception to the generally elliptical shape of the red blood corpuscles in fishes; and that the red corpuscles of the blood of the dog (which is not mentioned at all) approach even more closely in size those of the human subject than any of those mentioned. The next chapter, on the relations of the sexual functions, calls for no special remark. The information is full and accurate, although the case quoted on page 274 from Robertson is remarkable for the apparent duration of pregnancy according to the description given. The advice to the practitioner, who may find himself in the position indicated at the end of the chapter, is sound and will repay careful perusal by all young medical men. To the succeeding chapter, on infanticide, the same remarks apply as to Chapter X. Chapter XIV, on rape and defloration, is excellent, both from the legal and medical standpoints. A curious point in this chapter is that defloration is not even defined in the text. A chapter is devoted to the differential diagnosis of states of insensibility, and may prove of service in puzzling cases. The last word in line 29 from top, page 344, should be "open," not "shut." Chapter XVI, dealing with lunacy in its medico-legal aspects, is a specially well written chapter of great value to both legal and medical professions. It forms a complete guide to the medical man in circumstances usually demanding much more than ordinary tact and skill.

The section on toxicology is carefully written and brought thoroughly up to date. In this section the author has wisely refused to be tempted to include in the list of poisons selected for mention a very great number of substances which must of necessity cause poisoning in very few cases, and death in rare instances only. The number of substances found to be poisonous is being added to almost every day, but only a few can ever have any real importance medico-legally.

In the section on public health, extending to 281 pages, the author has contrived to give a very good synopsis of the various divisions of the subject, but of necessity there is no

attempt at giving an exhaustive description, although sufficient is embodied in the work to make it thoroughly useful. In this subject there is no finality in any of the various processes in connection with the communal health; and thus what was the vaunted solution of the difficulty yesterday is discarded to-day for some newer and apparently better method.

For the work as a whole nothing but praise can be given, and for Scottish students in particular there is simply no other book on the subjects on anything like the same level, although they may rather ruefully contemplate the 800 pages of matter to be digested in connection with the short summer course on the subjects.

In future editions it would be an improvement if all the illustrative cases were kept in separate paragraphs and in small type. The illustrations throughout are well selected, and for the most part admirably adapted to serve the object intended.

As was to be expected in a work of this kind, which departs so markedly from what may be termed the normal, there are a number of small errors which will, no doubt, be rectified in the next edition.

The book is sure to become one of the standard works on the subject of forensic medicine.

Elementary Ophthalmic Optics. By J. HERBERT PARSONS, B.S., B.Sc., F.R.C.S. London: J. & A. Churchill. 1901.

THIS is not a book which we can recommend. It, no doubt, contains all the optics necessary for an elementary student of ophthalmology, but that in a most slipshod and careless manner. Take, for example, the first paragraph of the opening chapter. Surely light is more correctly defined as a form of energy than as a "specific force." In this paragraph the author gets hopelessly confused between two such simple things as sight and the perception of light. Sight, which he uses as synonymous with perception of light, in reality involves certain conscious conditions as to the size, colour, shape, and distance of objects. Perception of light, as when the patient is aware of phosphenes, can never be called sight.

The description which the student gets of the undulatory theory of light is wholly inadequate, and had better been left out altogether.

We would remark, in passing, that the atomic theory of the

constitution of matter, and the existence of the luminiferous ether, are equally useful imaginary conceptions, and that the one does not rest on any surer foundation than the other. They are both hypothetical.

On p. 4 we are told that the wave-frequency is from 400 to 700 billions. The author probably means the visible wave-frequency.

The demonstration on pp. 7 and 8 seems to us careless. To begin with, the author uses the term wave-front without any definition of what is meant thereby, and, later, he assumes that the tangent to the semicircle drawn from B will cut the radius Q R at right angles, although he has not defined the position of this radius.

A simple diagram of the phenomenon of total reflection would have greatly assisted the student in mastering the information contained on p. 27.

We are sorry that we cannot recommend this book, for any student who has sufficient knowledge of elementary mathematics to read it is quite capable of reading more reliable manuals. That Dr. Parsons knows his subject-matter well there can be no doubt, and when he comes to a second edition we hope he will give the work a thorough revisal. We are glad to see that he assumes the modern student to have a knowledge of the functions of a triangle. In this he is right. No one can read any sound book on certain portions of modern ophthalmology without it.

Directions for Class Work in Practical Physiology, Elementary Physiology of Nerve and Muscle, and of the Vascular and Nervous Systems. By E. A. SCHÄFER, LL.D., F.R.S. With 45 Diagrams. London: Longmans, Green & Co. 1901.

IN this little book of 76 pages, Professor Schäfer embodies the directions long in use in his practical classes, partly for the convenience of his Edinburgh students, and partly to supply a concise account of those simple exercises which every medical student should perform, and with whose results he should be practically acquainted.

Chapter I deals with batteries, electrodes, keys, rheocords, the induction coil, and unipolar induction. In Chapter II the nerve-muscle-preparation is described, and the various forms of stimulation referred to, together with the action of the sartorius muscle-preparation. Chapter III deals with the muscle twitch, and the effect of heat, cold, and fatigue on

muscular contraction. In Chapter IV the action of curari, the muscle wave, and the action of veratrin are considered. The effect of successive stimuli, tetanus, record of voluntary contraction and sound of a voluntarily contracted muscle, are dealt with in Chapter V. Work of muscle is next considered, and the phenomena of acting nerve in Chapter VII. Paradoxical contraction, secondary contraction, the use of the capillary electrometer and galvanometer, and the excitation current of heart muscle, form the subject matter of Chapter IX. The frog-heart and cardiac nerves are taken up next; perfusion of the frog-heart and vessels described; the chief vascular and respiratory mechanisms briefly alluded to; and, finally, reflex action in frogs studied, and the modes of determining reaction time, discrimination time, and volitional time in man.

From the above *résumé*, it will be seen that the work is eminently practical. It seems odd to find no table of contents nor index, especially in a book from the hands of such an experienced author as Schäfer. Needless to say, the experiments are clearly described; a few blank pages at the end are added for recording results. The directions will form a safe guide for this branch of practical physiology.

Practical Histology. By J. N. LANGLEY, M.A., Sc.D., F.R.S.
London: Macmillan & Co., Limited. 1901.

DR. LANGLEY is so well known as an accomplished histologist, that this account of his methods is certain to have a favourable reception and careful perusal. It embodies the directions used for many years for the guidance of students attending his course of practical histology, as well as the histological account given in the last edition of Foster and Langley's *Practical Physiology and Histology*, together with certain modifications and additions referring to more advanced work. It may at once be said that the methods advocated have all been tested by experience, and those only are chosen which best illustrate the special tissue or organ. At the end of each section there are notes of demonstrations and special methods of preparing tissues.

The first eight sections are devoted to technique, the use of the microscope, the study of blood corpuscles, the measurement of objects under the microscope, methods of staining and mounting, of section cutting and embedding, and of rapid hardening of tissues. The connective tissues, muscles and

nerves, are next dealt with, and methods of preparation appropriate to each are given. In describing the mounting of undecalcified bone, it should have been noted that the Canada balsam must be very viscous or the lacunæ and canaliculi will be lost. The organs of circulation, of the lymphatic, alimentary, and excretory systems, are considered, and finally the skin and organs of special sense, the central nervous system, and the reproductive organs. An appendix, extending to some forty pages, gives a detailed account of special methods of observing fresh tissues, of hardening and preserving, of the use of celloidin, of staining fluids, the treatment of sections of living tissues, of injecting and pithing, and methods for special chemical constituents. It is somewhat noteworthy that there are no histological diagrams, the only three illustrations being of a *camera lucida*, Thoma's hæmacytometer and the Cambridge rocking microtome. The brief descriptions of most of the tissues and organs are clear and accurate, but those of sections of the bulb, pons, and basal ganglia would certainly have been more serviceable if even diagrammatic figures of the parts chosen had been supplied. In this respect, the book compares unfavourably with such works as Schäfer's or Stirling's on the same subject. A useful distinction is drawn between specimens which students should prepare for themselves, and more special sections shown in class demonstrations.

There is a full index, and the general get up of the book is excellent. Sound judgment is shown in the choice of methods, and will ensure the entrance of the book to all histological laboratories.

Essentials of Obstetrics. By CHARLES JEWETT, A.M., M.D., Sc.D., assisted by HAROLD F. JEWETT, M.D. Second Edition. London: Henry Kimpton. 1902.

THIS is one of those American epitomes with which the book market is flooded. The author states in his preface that the object of the work is to place the essential facts and principles of obstetrics within easy grasp of the student, and to act as an introduction to a more elaborate treatise. For this purpose the book is valueless, for, although nothing of much importance is not touched upon, the descriptions are so very brief that it is impossible for the student who has not already studied a larger and fuller work to comprehend their meaning. As an

epitome for revising the main facts before an examination the book may be of some value, but there are, even for this, better in the market.

The Journal of Obstetrics and Gynaecology of the British Empire. Edited by ALBAN H. G. DORAN, F.R.C.S. Vol. I, No. 1. London, January, 1902.

THIS first number of a new journal is imposing enough with its somewhat magniloquent name, and its staff list of nearly eighty on its title page. It is founded to represent the course of British practice, and to compare this with the progress of foreign schools. It is independent of all societies, and the editors invite contributions on the pathology of the pelvic organs and records of sound clinical work. In respect to treatment of any kind, that essay will be preferred in which the remote results are the most fully reported. The *Journal* is well got up and printed.

Text-Book of Obstetric Nursing. By F. W. N. HAULTAIN, M.D., F.R.C.P. Ed., and J. H. FERGUSON, M.D., F.R.C.P. Ed. Fourth Edition. London and Edinburgh: Young J. Pentland. 1902.

THIS well-known work has now reached its fourth edition. In this edition particular attention has been given to the management of labour, and especially to that of the third stage. Rules have also been drawn up for the antiseptic management of cases both in private and hospital work, and the book in general has been brought up to date. We have no hesitation in recommending this as a first-class manual for nurses.

Morphinism and Narcomania from other Drugs. By T. D. CROTHERS, M.D. London: W. B. Saunders & Co. 1902.

THE author, it must be acknowledged, as Professor of Mental and Nervous Diseases in the New York School of Clinical Medicine, is in a position to speak with some authority on this subject. He indicates himself that the work is practically the outcome of his clinical experience over a quarter of a century of active treatment and care of narcomaniacs. The book

is, therefore, a very valuable contribution to the subject. At the same time one must demur to the remark the author makes when he refers, while pointing to the meagre character of the literature, to "the brief notices in some of the late text-books." That does not, for example, suitably describe how the subject is dealt with in Clifford Allbutt's *System of Medicine*. On the other hand, he is quite entitled to insist strongly on the condition being the outcome of a true neurosis, requiring, from that point of view, careful study, not only as to etiology and treatment, but as to the medico-legal aspect. There is no doubt that he fulfils his intention of placing the matter very strongly before his readers in this light, at the same time giving them a good general survey of the subject as it at present stands. One feels, however, in reading through the book that it is too diffuse, that there is much repetition, and that some points are dealt with that would have been better omitted.

The most of the work has to do with morphine, so that out of 344 pages of subject matter, 269 are devoted to this drug alone. The remaining part of the book is chiefly taken up with cocaine, chloral, chloroform, ether, tea, coffee, and tobacco, while one chapter is devoted to those less commonly abused, such as sulphonal, trional, paraldehyde, &c.

The work altogether is, as stated above, a valuable contribution to the subject, and well worth perusal by those who are interested in habit-producing drugs.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

Pernicious Anæmias: Their Diagnosis and Treatment. By George Dock, M.D. (*American Medicine*, 5th July, 1902).—Pernicious anæmia is a "symptom-complex" rather than a distinct and specific disease, but, as a matter of convenience, it is spoken of as a disease. The complex includes many different features which, taken together, are often so characteristic as to permit of a diagnosis being made from them alone, but the final diagnosis depends on the examination of the blood. There are, without doubt, some fatal cases of anæmia where the blood conditions are not those of pernicious anæmia, and where the *post-mortem* examination does not reveal the presence of any other definite disease. But all fatal cases of anæmia are not necessarily

pernicious anæmias, and the examination of the blood may still be taken as the most certain method of diagnosis. In considering the etiology of the disease, it is difficult to connect any of its supposed causes, such as pregnancy, diarrhœa, hæmorrhage, intestinal worms, oral sepsis, &c., with the peculiar changes in the blood. These most probably are due to a specific poison, or at least to some toxic substance which may vary in different cases; but of this there is no certain proof.

In simple anemias due to loss of blood, young or unripe cells (normoblasts) appear in the circulation, it being as if the demand for mature cells could not be met. In pernicious anæmias the same immature corpuscles are to be seen, but, in addition, there are other cells (megaloblasts) which do not belong to the products of adult blood formation, but to that of the fœtus. It is difficult to explain this abnormal blood formation. It may be that it represents the final effort at compensation on the part of used up blood-forming organs, or, on the other hand, it may be due to the action of the toxin which causes the disease. The *post-mortem* examination of the bone marrow often shows changes corresponding to those in the blood, *i.e.*, a reversion to the late fetal type of marrow. And this raises the question as to whether pernicious anemia is not primarily due to a fault in the bone marrow—a perverted growth of the megaloblastic type—without a preceding destruction of blood corpuscles. This view cannot be put aside as impossible, yet Dr. Dock favours the theory which explains pernicious anemia as being due to excessive destruction of red blood corpuscles, particularly in the portal area, the fetal type of blood formation being secondary, perhaps due to the incompetence of ordinary blood-forming tissue.

Though the presence of megaloblasts is the most striking feature of the blood in pernicious anemia, yet no single feature of the blood is characteristic of the disease, but the whole series of alterations—diminution of red corpuscles and of hæmoglobin, the hæmoglobin index, the number of white corpuscles, &c., must be considered.

As to prognosis, it is not enough to say that it is unfavourable in pernicious anemia, for, in spite of many improvements, relapses seem so certain that the prognosis is always bad. Dr. Dock says—"A complete recovery cannot be expected in the present state of our knowledge, even in bothrioccephalus cases, unless the cause is removed before the megaloblastic degeneration is ineradicably developed. I have not seen a case of pernicious anemia that I thought had wholly recovered." The examination of the blood does not aid us much in prognosis, and one need examine only a small series of cases to learn that the blood changes have no constant relation to the outcome. "In general, cases with less than 1,000,000 red corpuscles are unfavourable; those with 600,000 or less, very unfavourable. But, even with less than 500,000, great improvement is possible; and, on the other hand, a patient first seen with 2,500,000 red cells, but with megaloblasts and poikilocytes, may steadily decline. So with all the other factors. A low colour index may be a good sign, likewise the normal proportion of polynuclear cells and eosinophiles, the absence of marked degeneration of the nuclei and protoplasm of the red cells, normoblasts numerous and megaloblasts few. But there are so many exceptions, and in some cases contradictions, in the various elements, that the prognosis can rarely be based on the blood."

Treatment.—The first indication is to find the apparent cause (intestinal worms, oral sepsis, &c.), and treat that. Fresh air is of the first importance, and the patient should be placed in the best hygienic conditions. The diet must be carefully looked to, and the digestive tract treated for any catarrhal or other disorder. As to drugs, none seems specific. Arsenic is often useful, but probably only as stimulating the blood-forming tissues. Iron and bichloride of mercury are often also beneficial in the same way.

The Leucocytosis of Pneumonia. By Dr. J. T. Hewetson (*Birmingham Medical Review*, August, 1902).—In this paper we are given a short account of some sixteen cases of pneumonia, the temperature, pulse,

respirations, and number of leucocytes per c.mm. being carefully tabulated for each day of the disease. In reviewing these cases, Dr. Hewetson draws the following conclusions:—"The leucocytosis of pneumonia is due entirely to an increase of the polynuclear finely granular oxyphiles, and probably begins on the first day of the illness. If the patient's reaction is vigorous, and the dose of toxin not overwhelming, the leucocytes increase steadily day by day, reaching their maximum about the day of the crisis. In mild cases, however, the leucocyte curve may anticipate the crisis and commence to fall before that day, whereas in severe cases the leucocytic increase is maintained for several days after the crisis and then falls gradually. A mild attack of pneumonia gives rise to a mild degree of leucocytosis. A severe attack, with vigorous reaction produces a high degree of leucocytosis, and a severe attack with a poor reaction produces little or no leucocytosis. . . . Of the sixteen cases, five proved fatal; of four of these, owing to the patient's early death, I was only able to make one leucocyte estimation, yet every one of these cases gave a normal or a sub-normal count. The fifth case was admitted on the second day of the disease and gave a leucocyte count of 21,840 per c.m.; on the following day it had fallen to 14,320, and on the following day again, which was only the fourth day of the disease, to 6,960; death occurred on the following morning. It is, therefore, probable that a falling leucocyte count, as well as an absence of leucocytosis prior to the crisis in a severe case of pneumonia, is to be regarded as a clinical phenomenon of very grave omen. On the other hand, it must not be assumed that every case of pneumonia giving a definite leucocytosis will recover. The high degree of leucocytic increase signifies a vigorous reaction against a severe pneumonic attack. Such a reaction cannot be maintained indefinitely, and frequently the plucky fight ends in exhaustion and death. . . . In retarded resolution, the leucocytosis is maintained for an indefinite time after the crisis—it may be for weeks, or even months. This maintained leucocytosis of retarded resolution, though somewhat lower than the primary pneumonic increase, is definite, somewhat irregular in degree, and tends to disappear gradually. Suppuration following pneumonia is similarly accompanied by a rising leucocyte count, after such has fallen to normal, or it resembles that of retarded resolution in being a continuation on a lower scale of the primary pneumonic leucocytosis. Suppuration is probably associated with more elevation of temperature than is retarded resolution. The important suggestion, however, given by a maintained leucocytosis after the crisis of a pneumonia is that there is some complication which calls for a careful physical examination of the chest, together with a judicious use of the exploring needle."

On Adrenalin Glycosuria and other forms of Glycosuria due to the action of reducing substances on the cells of the Pancreas. By Dr. C. A. Herter (*American Medicine*, 10th May, 1902).—This paper gives an account of some recent researches on the production of glycosuria by the action of reducing substances and other poisons on the cells of the pancreas. The paper itself is so condensed that it is almost impossible to give an abstract of it without quoting it in its entirety. For this we have not space, and so can only indicate some of the results arrived at.

The starting point of the enquiry was the observation that adrenalin chloride, when injected into the abdominal cavity of dogs, was always followed by the appearance of sugar in the urine. Subcutaneous injections of this drug produce but slight degrees of glycosuria, and when given by the mouth in ordinary doses, by no glycosuria at all. The largest quantities of sugar were obtained in well-nourished dogs, but adrenalin glycosuria was also observed in dogs that had been starved for several days.

The pancreas was next exposed, and the adrenalin applied directly to that organ, with the result that a marked glycosuria was produced even by small quantities of the drug, quantities which, when applied to other organs, gave rise to practically no glycosuria whatever. It seemed clear, therefore, that the glycosuria was due to the action of the adrenalin chloride on the pancreas,

and this explained why intraperitoneal injection so much more readily produced glycosuria than when injection was subcutaneous. It was also determined that this glycosuria did not depend on alterations in the vascularity of the pancreas, and it had no relation to the elevation of blood pressure.

Hydrocyanic acid was now substituted for adrenalin, and it was found that minute doses of hydrocyanic acid applied to the pancreas also produced glycosuria. It was thought that hydrocyanic acid, owing to its poisonous action on the pancreatic cells, would interfere with these cells taking up oxygen, and so determine the glycosuria. Various reducing substances were therefore experimented with, *e.g.*, sulphurous acid, sulphuretted hydrogen, carbon monoxide, &c., with the idea of withdrawing oxygen from the pancreatic cells; and they were also found to produce a glycosuria. These observations made it not improbable that the action of adrenalin chloride in producing glycosuria was connected with its reducing activity, and this opinion was confirmed when it was shown that adrenalin, deprived of its reducing action, could be injected intraperitoneally in large quantities without producing any glycosuria whatever. But Dr. Herter does not hold that the glycosuria produced as above-noted must be necessarily due to the reducing action of the substances concerned, for it may be due to a toxic action that they have on the cells. But, if so, that action seems sometimes to be closely connected with the power of reduction. Possibly, in some cases, the amount of oxygen removed from the cell is sufficient to account for the disturbance in the function of the gland. Of the intimate nature of this functional disturbance, nothing is known, but the potassium cyanide experiments suggest that the cells are poisoned in some way, which interferes with their oxidative activities. The glycosuria following conditions of asphyxia, as, for instance, after epileptic seizures, can possibly be referred to interference with the oxidations of the pancreas. The glycosuria following carbon monoxide poisoning can likewise be explained by the action of this gas on the pancreas. As regards ordinary chronic diabetes, it is known "that easily oxidizable reducing substances are constantly being produced in the organism, and that the combination of these substances is one of the fundamental activities of living protoplasm. . . . If, now, we imagine a disturbance in the normal balance between the oxidizing activities of the pancreatic cells and the production of reducing substances in other parts of the organism, it is easy to understand how a functional inadequacy of the pancreas might arise which would interfere (through an unknown mechanism) with normal combustion of sugar, and its appearance in the urine. If this conception be correct, the presence or absence of glycosuria in any organism may depend on the relation between two variable factors, production of reducing substances on the one hand, and oxidative pancreatic activity on the other. The effect of an excessive production of reducing substances (as from disease of the suprarenal gland) would be equivalent to a reduction in the efficiency of the pancreatic cells. In most cases of diabetes, both factors may coexist. Such a conception of the nature of diabetes helps to explain those instances in which the pancreatic lesions are slight in degree."

BACTERIOLOGY.

By DR. A. R. FERGUSON.

Leuconostoc Hominis and its Role in the Acute Exanthemata (Scarlet Fever, Measles, Typhus). By Professor Hlava, Prague (*Centralbl. für Bakteriologie*, &c., Orig., Bd. xxxii, No. 4, p. 263).—The author had previously (1887-89) described the occurrence of cocci in chains in such diseases as scarlet fever, measles, variola, typhus, and enteric. As a result of numerous culture experiments made with a view to ascertaining

whether the chain-cocci found in scarlet fever possessed any specific characters which might distinguish the organisms found in that disease from others of similar form, he was led to the conclusion that in diseases of the class mentioned an organism occurs which, in its main features, compares closely with *leuconostoc mesenteroides*, and was accordingly named by him "*leuconostoc hominis*."

The media used included, besides the alkaline media ordinarily used (peptone-agar and gelatine) for most bacteriological purposes, acid media (obtained by addition of lactic acid). In addition, media commonly used for the growth of hyphomycetes, and, more particularly, such media with the addition of some variety of sugar were employed. The author found that in bouillon, with a high percentage of saccharose added, and in saccharose agar, colonies of diplococci and of diplo-streptococci were obtained, surrounded by a homogenous envelope, in all respects resembling *leuconostoc mesenteroides*. *Streptococcus* from a pyogenic source only thrive on such media very sparingly, and sometimes failed to appear at all.

The author describes the cultural characters of the organism in question on various saccharine media at some length.

It appears that the gelatinous envelope in which the colonies of the organism are enclosed gives, after washing in alcohol and distilled water for several days, a red colour with freshly prepared Fehling's solution, and also with the solution of Soldaini. No capsular growth occurs on media containing maltose or grape sugar.

During growth in milk this medium is coagulated. *Leuconostoc hominis* stains by Gram's method; its envelope stains well with carbol fuchsin, but it partially loses its stain after alkaline dyes.

Microscopically the organism exhibits some polymorphism. It generally assumes a streptococcus or diplo-streptococcus form. Individual members of the chain, however, may assume a bacillary form or ovoid form. Many of its involution forms are of lancet or lozenge shape, and of larger size than the younger forms.

Of 21 cases of scarlet fever examined, it was found constantly in material taken from the tonsils, six times in blood examined during life (more severe cases), once in the urine. In two fatal cases, it was found not only in the tonsils, but in the heart muscle, spleen, and lymph glands. The author concludes that the organism constitutes a distinct species, and that it plays an important part in the pathogenesis of scarlatina.

Eight cases of measles were similarly examined, the nasal secretion, tonsils, sputum, and blood being investigated. *Leuconostoc hominis* was obtained in all the cases from the nasal secretion, tonsils, and sputum, and in two of the cases it was demonstrated also in the blood.

In one case of diphtheria examined, *leuconostoc* was found in association with the specific bacillus. The pus from a phlegmonous angina was also found to contain a diplo-streptococcus giving the same cultural characters on saccharose agar as *leuconostoc hominis*.

The organism is also found in large numbers in the nasal secretion in "infective colds." It has been found in the sputum from apparently healthy tonsils, covering carious teeth, both in the living and dead subject. It is not met with in young children nor in old persons with atrophic tonsils.

The author believes that the organism, by decomposing sugar with the liberation of acid, may play a part in certain morbid states of the mouth and teeth.

Professor Hlava believes from his researches that *leuconostoc hominis* plays an important part in some of the secondary purulent invasions seen after typhus.

So far experiments carried out on animals do not indicate that the organism possesses any high degree of pathogenicity for these.

The author hopes that a serum may yet be elaborated which will prove useful in cases where Marmorek's antistreptococcic serum has proved ineffective.

Diplococcus Pneumoniæ in Sputum of Chronic Bronchitis. Dr. Gromakowsky, Kieff (*Centralbl. für Bakteriologie*, Orig., Bd. xxxii, No. 3, p. 212).—Fraenkel's pneumococcus was found almost constantly in the sputum from cases of pure chronic bronchitis, and in 23 out of 33 cases examined produced a pneumococcus septicæmia in suitable animals. It is not apparently the result of mixture of sputum with saliva, as the organism could still be demonstrated after thoroughly washing the freshly collected sputum with sterilised water.

In bronchitic sputum, however, the organism appears to possess a more feeble degree of pathogenicity, only giving rise to a septicæmia after the sputum had been mixed with bouillon and incubated for twenty-four hours.

Books, Pamphlets, &c., Received.

The Artificial Feeding of Infants, by Charles F. Judson, M.D., and J. Claxton Gittings, M.D. Philadelphia: J. B. Lippincott Company. 1902. (10s. 6d.)

The Treatment of Tabetic Ataxia by Means of Systematic Exercise, by Dr. H. S. Frenkel, Translated by L. Freyberger, M.D. With 132 Illustrations. London: Rebman, Limited. 1902. (12s. 6d. net.)

Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology, Compiled for the New Sydenham Society. Fasciculus XIV (Double Number), Fasciculi I and II of New Series. Framboesial Syphilis (Yaws and Parangi) (Plates A to H and LXXV to XCI). London: The New Sydenham Society. 1902. (Price to Non-members, One Guinea.)

Atlas and Epitome of Abdominal Hernias, by Dr. Georg Sultan. Authorised Translation from the German. Edited by William B. Coley, M.D. With 119 Illustrations, 36 of them in Colours. London: W. B. Saunders & Co. 1902.

Treatise on Diseases of the Skin, for the Use of Advanced Students and Practitioners, by Henry W. Stelwagon, M.D., Ph.D. With 220 Illustrations in the Text, and 26 Full-page Lithographic and Half-tone Plates. London: W. B. Saunders & Co. 1902.

Heath's Practical Anatomy: A Manual of Dissections. Ninth Edition. Edited by J. Ernest Lane, F.R.C.S. With 321 Engravings on Wood, of which 32 are Coloured. London: J. & A. Churchill. 1902. (12s. 6d.)

Phonographic Outlines of Medical Terms, with an Appendix. Third Edition. London: Sir I. Pitman & Sons, Limited. 1902. (2s.)

Suggested Standards of Purity for Foods and Drugs, by C. G. Moor, M.A., F.I.C., F.C.S. London: Baillière, Tindall & Cox. 1902. (7s. 6d. net.)

- Diet and Food Considered in Relation to Strength and Power of Endurance, Training, and Athletics, by Alexander Haig, M.A., M.D. Oxon., F.R.C.P. Fourth Edition, with 7 Illustrations. London: J. & A. Churchill. 1902. (2s.)
- Abdominal Examination and Manipulation in Pregnancy, by Alexander MacLennan, M.B., C.M. Glasg., L.M. Rotunda, Dublin, with an Introduction by Professor Murdoch Cameron. London: Rebman, Limited. 1902. (6s. net.)
- The Blood: How to Examine and Diagnose its Disease, by Alfred C. Coles, M.D. Second Edition, with 6 Coloured Plates. London: J. & A. Churchill. 1902. (10s. 6d.)
- Manual of Hygiene, by W. H. Hamer, M.A., M.D., D.P.H. With 93 Illustrations. London: J. & A. Churchill. 1902. (12s. 6d. net.)
- The Wife and Mother: A Book of First Principles for the Guidance of Young Married Women, by Ralph Vincent, M.D. London: The Walter Scott Publishing Co., Limited. 1902. (5s)
- The Science and Art of Prescribing, by E. H. Colbeck, B.A., M.D. Cantab., and Arnold Chaplin, B.A., M.D. Cantab. London: Henry Kimpton. 1902. (5s. net.)
- Hygiene and Public Health, by Louis Parkes, M.D., D.P.H. Lond., and Henry Kenwood, M.B., D.P.H. F.C.S. Second Edition, with Illustrations. London: H. K. Lewis. 1902. (12s.)
- Transactions of the American Dermatological Association (May-June, 1901). Edited by Frank Hugh Montgomery, M.D., Secy. New York: Rooney & Otten Printing Co. 1902.
- Regional Anatomy, by Richard J. A. Berry, M.D., F.R.C.S.E., F.R.S.E. Vol. I: The Upper and Lower Limbs. Vol. II: The Abdomen and Thorax. Vol. III: The Head and Neck. New and Revised Edition. Edinburgh: William Green & Sons. 1902.
- A Manual of Medical Treatment, or Clinical Therapeutics, by J. Burney Yeo, M.D., F.R.C.P. In Two Volumes. New and Revised Edition. London: Cassell & Company, Limited. (21s. net.)
- The Etiology of Typhoid Fever and Its Prevention, being the Milroy Lectures delivered at the Royal College of Physicians in 1902, by W. H. Cortfield, M.A., M.D., F.R.C.P., Hon. A.R.I.B.A. London: H. K. Lewis. 1902. (2s. 6d.)
- The Practitioner's Guide, by J. Walter Carr, M.D., F.R.C.P.; T. Pickering Pick, F.R.C.S.; Alban H. G. Doran, F.R.C.S.; Andrew Duncan, M.D., B.S., F.R.C.S., M.R.C.P. London: Longmans, Green & Co. 1902. (21s. net.)
- Vari Metodi Anestesici e Loro Indicazioni. Dott. Giovanni Palleroni. Napoli, 1902.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 20TH SEPTEMBER, 1902.**

	WEEK ENDING			
	Aug. 30.	Sept. 6.	Sept. 13.	Sept. 20.
Mean temperature, . . .	57·1°	57·4°	54·5°	51·8°
Mean range of temperature between day and night, . .	17·9°	15·2°	15·0°	17·5°
Number of days on which rain fell,	3	5	2	5
Amount of rainfall, . ins.	0·58	1·29	0·02	0·42
Deaths registered, . . .	216	246	240	211
Death-rates,	14·5	16·5	16·1	14·1
Zymotic death-rates, . . .	1·6	2·1	1·7	1·3
Pulmonary death-rates, . .	3·4	3·8	3·2	3·2
DEATHS—				
Under 1 year,	43	55	44	44
60 years and upwards, . .	51	61	57	46
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	1	2	2	...
Scarlet fever,	2	1	3	1
Diphtheria,	1	...	2	1
Whooping-cough,	10	4	4	4
Fever,	1	4	3	2
Diarrhoea,	9	20	11	11
Croup and laryngitis, . .	...	...	...	...
Bronchitis, pneumonia, and pleurisy,	32	43	48	24
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	13	6	10	14
Erysipelas,	22	18	26	18
Scarlet fever,	29	60	46	51
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	11	7	17	13
Continued fever, . . . .	...	...	1	...
Puerperal fever,	2	3	2	5
Measles,*	27	16	16	24

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

No. V. NOVEMBER, 1902.

ORIGINAL ARTICLES.

THE VALUE OF REST AS EFFECTED BY OPERATION
IN THE TREATMENT OF CERTAIN DISEASES OF
THE ALIMENTARY CANAL.¹

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REST, in its widest and most comprehensive sense, is probably the best recuperative agent in effecting tissue repair. Injuries and many diseases alike require but rest for Nature to heal and restore to health. Rest is the basis of antiseptic surgery, and so covers one of the widest fields in the treatment of all wounds, whether intentionally or accidentally produced. It is the sole requisite needed to restore the overwrought organ to its normal state. In short, rest is Nature's one supreme and all powerful agent to accomplish that which it is her prerogative alone to do. But it is not with this very wide and almost inexhaustible application of rest that I wish to ask your attention this evening; my desire is rather to limit its employment to the treatment of certain more or less chronic affections of the alimentary canal, embracing the œsophagus, the stomach, and the intestines.

With the exception of the viscera connected with the

¹ Presidential Address delivered at the opening meeting of the Glasgow Pathological and Clinical Society on 13th October, 1902.

circulatory and respiratory systems, no other organs of the body are liable to such variations in functional activity as those associated in the whole scheme of digestion. And it may be said, further, that few organs are so liable to abuse in the way of excessive stimulation or to such prolonged periods of activity. In conjunction with those of the renal system it is possible that no other organs will stand so prolonged a strain upon their functional activity before manifesting some symptoms of derangement. It is in these combined factors of over-stimulation and undue activity that we find the most fruitful source of almost all gastro-intestinal diseases. The various inflammatory conditions recognised as catarrh, both acute and chronic: the various forms of intestinal obstruction, acute and chronic: and even carcinoma itself may and probably do find their first incentive, in not a few instances, in a disproportionate relation between what the alimentary organs can normally discharge, and what they are occasionally unduly called upon to perform. Considering these conditions as finding their origin in the abnormal ingestion of food, there are two principal ways in which the abuse is exercised. First, through the quantity of food, and the frequency with which it is taken: and, second, through its quality. The former mode of abuse exists among the more well-to-do members of society, and more particularly that section of it which is indolent; while the latter is to be found in the poorer classes.

The modern stress placed upon the curative value of dieting as contrasted with the older methods of physicking, indicates how a more rational effort is made to restrain over-indulgence, to simplify and regulate the kind of food ingested, and in a general way to effect by as natural means as possible the influence of rest upon the whole digestive system.

It would lead me without the bounds of my intentions this evening to discuss further the many causes, besides those of a purely dietetic character to which I have above alluded, that conduce to organic and functional disturbances of the alimentary canal. In many instances it will happen that the removal of the cause will effectually disperse all the bad symptoms; but, on the other hand, there will not only be cases where the cause is irremovable, but where secondary changes have been set up that require of themselves treatment quite distinct from that which is needed for the cause. Whatever the cause, however, and whatever the consequence, I am assuming that rest in principle has been the object aimed at in the treatment of the case by the physician. He has regulated the diet, he has rung the changes on his therapeutic armamentarium, he has

systematically washed out the stomach, or he has as effectually cleared out the bowels; and yet neither he nor his patient is any the more satisfied with the permanent progress made. It is how that needed rest for any part of the alimentary canal may be obtained by surgical intervention that I wish to show you this evening.

Let me now, however, descend from generalities, and indicate more specifically what operation has already been able to do in the matter of giving temporary rest to certain diseased regions of the alimentary tract, and what it still further hopes to accomplish in this comparatively new field of labour. I will take each region separately and illustrate by cases, where it seems advantageous to do so, the value of the treatment.

THE ŒSOPHAGUS.

There are probably no diseases essentially peculiar to the œsophagus which are unaccompanied with some amount of inflammation. The disease itself may be purely inflammatory; but whether it be so or not, the constant irritative effects of the ingesta and the probably increased efforts connected with deglutition, tend either to introduce that complication, or if present, to increase it. Regulation of the diet as regards both quantity and quality, coupled with the administration of sedatives, may tend to materially reduce, but can never overcome, the pain and inconvenience associated with deglutition. It is not until the affected part is given complete rest that the needed relief is obtained and the patient enjoys comparative comfort; and this rest can only be got by the introduction of the food into the stomach by another way than that of the gullet. The performance of gastrostomy effects the object perfectly. I could quote, were it necessary, numerous instances of the complete abeyance of pain after the performance of this operation in cases of œsophageal obstruction, more particularly as instanced in cancer of the gullet. But not only is the pain relieved, but the result of the rest so acquired is, that in the course of a few days the patient finds that he can swallow naturally without pain, and take food of a more solid consistence than hitherto. The result of rest in these cases is extremely striking; and it can be acquired at so little immediate and remote expense to the patient. I have now performed this operation several times; and so simple and safe is it, that under simply cocainisation of the skin, I have executed it in twelve minutes, by the method I always employ, that of the Kader-Senn. I might extend this

consideration of rest to the œsophagus by gastrostomy to the treatment of other affections than those of obstruction from carcinoma—the commonest—but I am anxious to pass on to the stomach and intestines, for it is more particularly with the former that I think so much remains yet to be done in the way of operative interference.

THE STOMACH.

In the case of the stomach, more than in any other part of the alimentary canal, are the valuable results of rest as effected by operation to be most strikingly seen.

Innumerable as are the causes which give rise to gastric indigestion in its widest sense, these causes in many instances, sooner or later, lead to a series of symptoms dependent almost exclusively upon the secondary changes wrought in the organ itself; and it is often for the relief of these induced changes, as much as for the cause which has given rise to them, that operation is called for.

There is no need for the purpose I have in view to discuss at any length the various causes of, or the many symptoms connected with, gastric indigestion. It may be ulcer with some of its many and varied complications; it may be something obstructive at the pylorus—organic or functional; it may be some form of chronic inflammation; or it may be some derangement in the quality or quantity of the gastric secretion. But whatever the nature of the lesion and the symptoms arising therefrom, it is the chronicity of the cases, their obdurate resistance to all attempts at cure by the ordinary methods of medication and dietetics, that places them in the category of those which will be benefited by operation.

I have for some time been an ardent advocate for an exploratory operation in these trying and intractable cases; but practical experience has now driven me further, for I have learnt that to give the stomach rest by the performance of a gastro-jejunostomy is to cure, or at least permanently relieve, the majority. If I say that I have cured cases of hyperchlorhydria, chronic gastric catarrh, and non-obstructive dilatation of the stomach by gastro-jejunostomy, and have discovered unsuspected contractions and adhesions in the region of the pylorus, which have been equally benefited by the same operation, it must not be understood that I am advocating surgical intervention before other and more conservative measures have been tried. Indeed, in not a single case that I have operated upon has the patient been without a full and

fair trial of every other means. It is because drugs, and diet, and stomach washing have failed to bring anything more than temporary relief that operation has at last been resorted to, and this too often after years of fruitless efforts on the part of the practitioner, and miserable suffering on the side of the patient. But I would contend, however, that patients should not be submitted to such indefinite and prolonged periods of conservative treatment as they have been in the past, before operation is entertained. It is, I know, difficult to place a limit on the period which should be spent in trying to improve or cure what appears to possess all the indications of chronicity. If I venture to suggest how long treatment by the ordinary methods should be persisted in, I think a year should be the very outside limit, for if permanent improvement cannot be attained in that time, it is not fair to the patients, presuming they are willing to undergo an operation, that they should be longer denied the benefit which will almost certainly accrue from such treatment, either in the removal of the cause, or, as is more likely, in the rest which it will be possible to give the stomach.

But let me indicate a little more fully what this rest to the stomach actually means; and before doing so, I would like to remind you of a few facts connected with the stomach itself.

GASTRIC PHYSICS.

Whatever may be the physiological powers possessed by the stomach as a digestive organ, it is certain that it is possible to get on without it. Ever since Schlatter's memorable case of total excision of the organ, there have been several others to support the lesson derived from that case—that the possession of a stomach is not vital to the interests of the general economy. The body can be perfectly well nourished without the aid of the juices or the movements of the stomach. After all, the viscus is only a comparatively small segment of the entire alimentary canal, and while it is capable of a very abundant secretion, it is quite probable that its performance in this connection is not out of proportion to the amount of fluid secreted in other parts of the intestinal tract. It does not receive the important secretions of the liver and the pancreas, which doubtless play an all vital part in the metabolic processes of digestion. It is, however, a very dilated segment of the canal, and herein possibly it fulfils its chief function, inasmuch as it is rendered capable of receiving and storing a comparatively large quantity of food stuffs, until such times

as they are needed or fitted to be passed on into the intestines for further digestion and absorption. I am not wishing to belittle the function of the stomach, only I think our hitherto respect for it has been rather shaken by what surgery has taught us in recent years. Considered as a storehouse, it is easy to understand how many of the derangements we are at present discussing may be originated or augmented: and how benefit may be derived by relieving it artificially of its contents. Now, this relief, and its mode of production, constitute the very essence of what is to be understood by rest.

Looking at the subject from purely a mechanical point of view, we have a segment of the alimentary canal quite differently disposed from any other part of the tract and quite different in its mode of action. While in the various other segments the calibre of the canal is more or less uniform, and the only action that of onward propulsion, in the case of the stomach the conditions are favourable more for the temporary retention of the contents. The pylorus, with its sphincter and somewhat elevated position, offers a rhythmical or periodical impediment to the onward passage of the ingesta; the largest part of the viscus is downwards or dependent; and the arrangement of the muscle fibres is such as to entail a churning process of the contents. If now we establish an opening between the lower or dependent part of the stomach and the bowel, we shall at once introduce a factor that will remove any possibility of the contents being retained—in short, we shall drain away the food and place the stomach in practically a functionless position, or in other words, it will assume a condition of rest. But in these normal peculiarities of the stomach, if one may so express it, are to be found the very conditions which so readily conduce to the production of abnormal derangements. We have but to assume that, from some cause, the proper contraction and dilatation of the pylorus are interfered with, to understand how the food may be unduly retained, and the proper function of the viscus upset; or, we may consider the impairment of proper muscular action and secretion which must follow upon a chronic inflammatory condition of the mucous membrane. As the result of either of these disturbances the stomach may soon dilate, because it has no means of resting and recovering from its overstrained and overtaxed state.

PYLORIC OBSTRUCTION.

Let me, however, pass on to deal with my subject more specifically from the aspect of actual disease, and to consider,

in the first place, the question of obstruction at the pylorus. Up to a certain point, the stomach, like all other muscular organs, will increase its powers in order to compensate for the difficulty it has to encounter; but the time comes when this compensation is no longer sufficient and the organ begins to dilate, its contents to stagnate and ferment, and the patient to suffer in the usual way. Relief from pain and discomfort is only to be had by periodical washing out, and life is barely sustained by what the stomach is able to digest and absorb. It is needless to indicate that in this class of case, the direct drainage of the contents of the stomach into the jejunum gives such complete rest that the normal functions of the viscus, if by any chance they have not become irretrievably damaged, soon recover to a very large extent. So obvious are the benefits to be derived by the performance of a gastro-jejuno-stomy in these cases, that one finds it hard to believe that any such could still exist untreated; and yet, judging by my own comparatively limited experience, they must positively be legion. I could quote cases which I have treated within the the present year that have been under the care of most experienced and respected practitioners, who seem to have still lingering in their minds the teaching of their youth, that the only treatment is careful dieting and constant stomach washing; and so these poor lean patients struggle on from year to year, eking out their wretched existence, a misery to themselves and a burden to their friends.

Let me just instance, for the sake of an example, one such case, that of a woman who was under my care in the Victoria Infirmary last July. She had been a sufferer for years. There was no history of ulcer, nor of biliary colic, and, indeed, nothing to account for the origin of her trouble. Her symptoms had commenced insidiously, and were those connected with what she termed indigestion. She had tried every means that had been suggested to her; and, like the poor woman who had an issue of blood twelve years, "had suffered many things of many physicians, and had spent all that she had and was nothing bettered but rather grew worse." Reduced to a condition of skin and bone, she willingly acceded to an operation which held out to her reasonable prospects of a cure. With the assistance of Dr. Grant Andrew I operated, and found the pyloric orifice minutely contracted, so narrow that it was impossible to penetrate it. A gastro-jejuno-stomy was performed, and the patient made an uninterrupted recovery. I wish some of the doctors who had been doing their best to give relief to this patient could have seen the

joy depicted on her poor emaciated face when one morning—the fifteenth after the operation—she said she had been able to take for the first time for five years a bowl of porridge at breakfast. I may say in my experience as a surgeon, that I hardly know any class of cases where such unbounded gratitude shows itself for the relief which operation affords as in some of these chronic gastric cases.

CHRONIC GASTRIC CATARRH.

I ask you now to consider another class, that of chronic gastric catarrh. Whatever be the cause of this inflammatory condition, and the causes are probably both many and varied, there is no doubt that when once well established, it proves itself a most intractable complaint; not only proving a source of constant physical distress and discomfort, but often producing a very marked depressing mental effect. In many cases I believe the original cause has been removed or cured, and the symptoms which linger behind are solely those connected with the disordered stomach. If the stomach's movements consisted, like those of the œsophagus, in passing its contents uninterruptedly onwards, it is probable that any such inflammatory condition would only be temporary; but the organ being a receptacle in which the food is retained, and thereby capable of being persistently irritated, there is very little chance of it even getting the necessary rest for repair and recovery. Here, then, the establishment of a fistula bimucosa between the stomach and the jejunum, by drawing off rapidly the gastric contents, affords exactly the relief required. To suggest such a radical line of treatment in cases of simple chronic gastric catarrh is, I doubt not, to shock the conservative feelings of some of my hearers to whom the idea is new, and to whom also the supposed gravity of the operation appears altogether out of proportion to the needs of the case. But I could quote to you cases of the most striking immediate relief and recovery, where other treatment had failed. Here is one. A lady had suffered from gastro-intestinal symptoms for about seven years. The simplest food could alone be taken, and this had often to be removed to give comfort. Quantities of mucus were from time to time removed from the stomach and passed occasionally by bowels. There was much emaciation, with concomitant weakness and inability for physical exertion. On opening the stomach, preparatory to establishing a fistula with the jejunum, I found the mucous membrane of the former in a congested condition and coated with slimy mucus. In

less than four months after the operation the patient had already shown signs of great improvement, and had put on twelve pounds in weight.

GASTRIC HYPERCHLORHYDRIA.

A third class of cases, for which I ask your consideration, comprises those patients who for some inexplicable reason suffer from a hyperacidity of the gastric contents. Whether this abnormal abundance of free hydrochloric acid is the cause or consequence of certain other associated symptoms, it is, perhaps, in most instances, not possible to say. One thing, however, is perfectly certain—that drainage of the stomach by a gastro-jejunostomy effects immediately the relief of the condition of hyperchlorhydria, and with it the almost equally rapid disappearance of the associated symptoms. I must give you a very striking instance in illustration of this treatment. The case was that of a young man, *æt.* 22, who had for about eighteen months suffered from, at first, symptoms more of a neurotic character; he soon, however, began to be troubled with his stomach. His food, unless carefully chosen, would cause a sense of weight and discomfort in the epigastrium, and his only means of relief came to be by voluntarily inducing vomiting or by washing out the gastric contents. He was much troubled with acid eructations, and an examination of the stomach contents after a test breakfast showed a very high percentage of free hydrochloric acid. Some degree of dilatation was present, as indicated by distension with gas. He had travelled for his health, and tried various remedies, but with no good. An exploration of the stomach at the time when a posterior gastro-jejunostomy was performed, revealed a somewhat thickened pylorus with a contracted orifice. The feeling, however, I had at the time was that we were dealing more with a spasmodically contracted orifice, than with any organic lesion. He made a rapid and complete recovery, and now some eighteen months since his operation, enjoys the very best of health. It may have been in this case that his earlier somewhat obscure neurotic symptoms had led to his stomach condition, but this latter had finally usurped the position of all others, and he had come to live a very miserable existence. It is not difficult to understand how the secretion of the gastric juice might be very materially altered through vicious innervation, so that the juice would act as an irritant or undue stimulant to the pyloric sphincter. This, again, might cause either a spasmodic or permanent contracture of the orifice,

which would lead to dilatation of the stomach. Whether or no this be the true explanation of the case, the fact remains, that rest to the stomach by direct drainage put an end to all the patient's trouble. I might quote to you many other cases illustrative of this method of treatment for hyperchlorhydria, drawn from foreign sources: for its adoption abroad has been much more frequent than in this country. But what I have said I trust is sufficient to convince you that the treatment is both rational and proper in obstinate cases of the kind.

CHRONIC GASTRIC ULCER.

A fourth class of cases comprises patients suffering from gastric ulcer, a condition frequently associated with great hyperacidity. I suppose no similar lesion on the surface of the body would ever be considered as being properly treated unless all external applications and internal administrations were combined with rest. It is quite true that the same ends are aimed at in gastric ulcer by what is practically a modified form of starvation; but while a cure is effected in many cases, and apparent improvement in most, there must be a very large proportion where the ulcer goes on insidiously increasing to such an extent that, when healing does follow, it is at the expense of an amount of cicatrisation that leads to another and often more serious set of derangements. Here, again, I think we may justly take it that modern surgery has been the means of revealing how grave are these derangements, the consequences of a healed gastric ulcer, quite irrespective of those more serious results with which we have at all times been familiar, perforation and copious hæmorrhage. If we consider the four complications of gastric ulcer—perforation, hæmorrhage, internal contractions, and external adhesions—and the great frequency with which one or other of these is met with, it may well be asked whether the operation of gastro-jejunostomy should not be considered as a recognised method of treating ulceration *per se*. I do not deny, what will doubtless be asserted, that the large majority of gastric ulcers will heal if sufficient time is allowed and proper treatment employed; but my chief contention is that this question of sufficient time as at present considered is by far too long. An ulcer that takes months to heal must almost inevitably have reached such dimensions as to cause considerable contraction in the end. It may seem to you a very bold statement, but I make it advisedly, when I venture the opinion that if chronic gastric ulcer were viewed in the same light as we have come

to regard a chronic appendicitis, and always operated upon, we should see very few of the serious complications and fatal results that so frequently confront us at present. So safely can a gastro-jejunostomy be performed in experienced or even careful hands, that many more lives would be spared than would ever be lost through the operation. It is difficult, perhaps, to convince those who from their student days upwards have become wedded to the old conventional lines of treatment; but I would ask you to consider what surgery has done and is doing in successfully combating the more serious complications of gastric perforation and gastric hæmorrhage: and if life can be spared in these extreme and difficult conditions by surgical intervention, how much easier is it to prevent the possibility of their occurrence by operating in what might, for the sake of comparison, be termed the periods of quiescence. Rest is the one factor required for the healing of a gastric ulcer, and this can only be perfectly and with certainty effected by a gastro-jejunostomy.

I should like to add here, that when writing the above I was unaware of the fact that operation for uncomplicated gastric ulcer had already entered the field of recognised and accepted treatment for that disease. In the August number of the *Annals of Surgery* for this year there is a paper by William J. Mayo, of Rochester, Minnesota, recording the fact that during the last three years, and with increasing frequency, gastro-jejunostomy has been performed twenty-five times for the relief of gastric ulcer. It was successful in all except one, and that one case presented so many other serious complications that it seems hardly fair to regard it as one that should be considered in the connection here intended.

While gastro-jejunostomy is the operation specially referred to, both in my own remarks and in the cases above alluded to, there is no reason to exclude the more radical, and, indeed, often simpler, measure of excising the ulcer, when the lesion is so situated as to admit of its being thus treated. I can conceive of no simpler or safer abdominal operation than the excision of an ulcer situated on the anterior wall of the stomach towards the pyloric extremity. As you know, these are the ulcers that most frequently perforate, and when they do so, lead to the most rapid and fatal form of peritonitis. If it were the routine practice to operate upon all cases of gastric ulcer, I believe we should very rarely hear of death the result of perforation in this otherwise particular fatal class of cases.

It occurs to me that it would be interesting, if not actually instructive, to obtain certain statistical facts in connection

with gastric ulcer as met with in our three Glasgow infirmaries. To accomplish this end I was fortunate in acquiring the services of Dr. McLaren, of the Royal Infirmary; Dr. Walker, of the Western Infirmary; and Dr. Anderson, of the Victoria Infirmary, respectively associated in the pathological work of these institutions. To these gentlemen I am much indebted for the facts I am able to bring before you. The period over which the investigation extends is five years; that is, from 1897 to 1901 inclusive. The object aimed at in these statistics was to show, in the first place, the proportion of cases of gastric ulcer to those of all other medical cases admitted during this particular period: and, in the second, the number of deaths naturally resulting from the disease. It need hardly be pointed out that the death-rate bears no direct relationship to, nor admits of any proper comparison with, cases admitted for treatment. For many cases leave the infirmary to die of the disease, or its subsequent complications elsewhere: and many are admitted—as, for instance, cases of perforated gastric ulcer—to be, if possible, saved by operation from the natural consequences of the accident. For all practical purposes it is proper to include these cases as among those which would inevitably have been lost had the disease been allowed to take its natural course. So, then, these are the statistics derived from the three sources named.

TABLE OF CASES OF GASTRIC ULCER ADMITTED INTO THE THREE GLASGOW INFIRMARIES WITHIN FIVE YEARS—1897 TO 1901 INCLUSIVE.

INFIRMARY.	Total number of medical cases admitted.	Number of cases of gastric ulcer.	Percentage.	Number of cases of perforating gastric ulcer causing death.
Royal, . . .	11,508	197	1·7	21
Western, . . .	7,726	409	5·2	24
Victoria, . . .	3,165	86	2·7	14
Totals, . . .	22,399	692	3·08	59*

* Composed almost entirely of cases of perforation.

While this table shows quite accurately the comparative frequency with which gastric ulcer occurs, it, of course, fails utterly to indicate the true natural fatality of the disease.

Only a critical study of the Registrar-General's returns could possibly render manifest, and that but imperfectly, the probable number of deaths that occur throughout the country, of which our hospital records return only a mere fraction. For we must remember that it is not only the ulcer itself which we have to consider, but the complications which arise subsequently, and which may indirectly become the cause of death. It would, indeed, be instructive if we could trace the life-history, say for the succeeding ten years, of every case admitted and treated to a supposed conclusion in, perchance, only one of our institutions in one year. I wonder how many are truly cured, and free from any subsequent complications and symptoms. I believe I rightly interpret the opinion of every physician when I say that he would not confidently assert that he has healed the ulcer, or cured his patient, because he has completely relieved his symptoms. And it is this very doubt alone that seems to me to constitute a strong plea for operation, apart altogether from the other evidences that I have deduced in connection with the comparatively frequent fatality of the disease. But, gentlemen, I must not pursue this matter further, interesting and instructive as I believe it to be. I cannot, and do not, expect to convince you at once of all that I am advocating, but I do trust, and have reason to hope, that what I have said regarding the operative treatment of gastric ulcer will prove worthy of your most careful consideration.

GASTRIC DILATATION.

Yet another class of cases may be instanced as capable of being benefited by surgically effected rest. I allude to apparently uncomplicated cases of gastrectasis. I say uncomplicated, but all the same I believe it more correct to regard the dilatation of the stomach as a secondary rather than as a primary condition, and dependent upon a cause the evidences of which are often of themselves neither sufficiently clear nor constant. It may, in some instances, be the result of spasmodic contraction of the pyloric orifice, although spasm of the pylorus is a condition we know very little about; and yet there is every reason to suppose that it may be a sequel to certain irritative lesions of the mucous membrane, ulcerative or inflammatory, and to some more remote reflex or direct nerve influences. That dilatation may arise from other than obstructive conditions is possible, nay, probable. Any condition, whether local or constitutional, that would bring about

an impairment in the muscle tunic of the stomach might lead to its inability to withstand the distending forces of food and gas. It is certain, however, that we do occasionally meet with cases where a dilated stomach is the most obvious physical symptom, and where there co-exists an intermittency in the severity of the symptoms which renders it difficult to ascribe the condition to any fixed and constant organic lesion. Empirical as at first sight it may seem to perform a gastro-jejunostomy in these cases, yet the result of rest so effected has, in my personal experience of two such cases, been perfect. It is quite possible that in both cases the intermittent spasms of the pyloric sphincter, which I believe existed and caused the dilatation, owed their origin to some irritation derived from a lesion of the gastric parietes, which was undiscoverable either before or at the operation: and that this lesion, whatever it was, was cured by the rest which the stomach obtained in the operation. If this be the explanation, then, the practical treatment adopted was in the highest sense rational and proper. For the healing of the lesion prevented any further spasms of the pylorus, and with no further obstruction to the exit of the contents of the stomach, this organ was rendered capable of returning to its natural size, and regaining its normal contractile power.

The first case of non-obstructive dilatation of the stomach which I treated by operation I should like to briefly refer to. I published full particulars of the case in the *Lancet* (vol. i, p. 952, 1899). The history of the case pointed to an old-standing gastric catarrh which had been cured, but left a permanently dilated stomach. The patient was a traveller by occupation, but owing to his chronic gastric trouble, with its accompanying emaciation and general bodily weakness, he was unable to follow his profession. At the operation nothing of the nature of any gross organic lesion was discoverable; the pyloric orifice was normally patent, but the stomach walls were thin and atonic, and the viscus more like some flaccid receptacle. In this case I performed a gastro-plication, doubling in the anterior wall in such a way as to very materially reduce the size of the gastric cavity. I need not give you further particulars regarding the progress of the case, but I will tell you of the ultimate result. I saw the patient a short time ago, that is to say, about three and a half years after the operation; he told me that he continued in good health, could eat and enjoy anything, and was actively engaged in the pursuit of his profession.

Now, I mention this case because I think it falls under a

somewhat different category to those I have previously been alluding to, and requires a different mode of treatment. A stomach which manifests intermittent periods of dilatation indicates that there is no serious impairment, and certainly no permanent loss, of the power of muscular contraction. A stomach efficiently drained by gastro-jejunostomy under these conditions will certainly, with the rest which is ensured it, recover its normal contractile powers. But if the stage of intermittency of dilatation is passed, and a permanent condition of gastrectasis reached, then it may reasonably be doubted whether the mere drainage of the viscus will result in a return of normal functional activity. Supposing, however, no such return possible, it is more than probable that a well-established bimucosal drain would afford immense relief. The case just related supports the view that in advanced cases of non-obstructive dilatation a good result is to be expected in the simple reduction of the size of the cavity. I suppose it really means that we convert an inert sac more or less into a canal, which, instead of allowing the food to lodge, passes it on much in the same way as is effected in the other more tubular sections of the alimentary tract. There is much more, however, I think, to be said in favour of the earlier treatment of these cases by gastro-jejunostomy, than of allowing them to advance till intermittent dilatation ends in permanent gastrectasis.

GASTRO-JEJUNOSTOMY.

Before summing up my remarks upon the stomach, I wish to say a few words upon the operation of gastro-jejunostomy, for it is important towards the end in view that your minds should be disabused of any false idea regarding the gravity or undue severity of the operation. Although I have considered it almost to the exclusion of all other means of surgical treatment or modes of operating, I do not wish to say that there may not be cases where it might be thought wiser to remove the pylorus (pylorectomy), or to excise an ulcer (partial gastrectomy), or to lessen the size of a dilated stomach (gastrorrhaphy), or to separate adhesions (gastrolisis). But, considering the subject in a very broad and general way, a gastro-jejunostomy will, with hardly any exceptions, fail to attain the ends desired. As regards, then, the performance of this operation. If a mechanical contrivance is used for making the connection between the stomach and the jejunum, such, for instance, as a Murphy button, the operation can be done in about half an hour; and if stitching is solely relied upon, about

double the time is required, although often less than this will suffice. It is not, however, so much a question of minutes one way or the other, as of absolute attention to the smallest details of the operation. The immediate after-effects are, in the majority of cases, nil, and the recovery of the patient uneventful. As to remote effects, the abdominal wound should leave the parietes as sound as in any other case of laparotomy—that is, with no tendency to ventral hernia.

The after-effects of the operation, so far as they concern the union of the jejunum with the stomach, should perhaps receive a little more consideration than I have thought necessary to give in connection with the other steps of the procedure, for we, in point of fact, establish two new and abnormal permanent conditions. We make a fistula between the stomach and the intestine, which rarely becomes completely closed; and we anchor a portion of the gut to the gastric parietes, which never becomes separated.

First, in regard to the fistula, we know that there is a very marked difference noted in those cases where the pylorus is obliterated, and where it is more or less normally patent. Opportunities have been afforded for the examination of the artificial orifice in cases operated upon at some considerable time before. Thus, in one case operated upon between three and four years previously for a condition which did not involve any obstruction at the pylorus, the fistula *bimucosa* had become reduced to the size of a lead pencil; while in another case, where organic pyloric obstruction did exist, the artificial aperture had undergone no appreciable reduction. We may, therefore, fairly conclude that where the operation is performed with the object of giving merely temporary rest to the stomach, the subsequently normally restored digestive functions will be but little disturbed by the comparatively slight leakage that may last for life. Although, I believe, normal gastric digestion need never be very seriously considered in the matter of gastric drainage, still as we possess some power of restoring the organ to its original function, I think we ought to do so, seeing that it is merely a matter of regulating the size of our fistula to the particular demands of the case. If we desire only a limited period of drainage, the connection between the stomach and the bowel must not be too large: while, on the other hand, if we wish to permanently divert the gastric contents by the short circuit, we must make the communication proportionately larger. So far, then, as the fistula itself is concerned, there is nothing to militate against its formation by reason of any possible ill effects in after life.

The permanent adhesion of the bowel to the stomach may naturally raise some doubts as to whether this attachment might not give rise to after-effects; and yet so far as we have been able to ascertain from practical experience of the operation, and from what we know of other conditions of gastric adhesion, there is no just reason to suppose that this particular union should act deleteriously. In the first place, the junction is between two freely movable viscera, and although one may and probably does act independently of the other, neither can have much of an inhibitive influence. But apart from such theoretical deductions, there is the practical fact that, so far as I personally know or have been able to ascertain from the recorded experience of others, these patients, never, as long as they are under observation, manifest any symptoms that could, in the slightest degree, be attributed to the adhesion of the one viscus to the other. Certainly we might reasonably expect that, were symptoms to follow, they would do so at a very early period, most assuredly within the first post-operative year, before the parts had been able to thoroughly accommodate themselves to the newly formed conditions. What we do know about symptoms connected with gastric adhesions, all points to the involvement in some way of the pyloric region of the stomach. Indeed, it seems more to the physical effects produced upon the pyloric outlet, than to the mere actual adhesions themselves, that the symptoms are due. It is in reality that the pylorus is obstructed or in some way hindered in its natural function of allowing a free exit to the gastric contents. We may have the posterior wall of the stomach bound down by adhesions to the pancreas, or we may have the viscus artificially fixed to the anterior abdominal parietes, as the result of a gastrostomy, or somewhat similarly secured in gastropexy for gastroptosis, but in none of these conditions, which are much more truly fixative in their effects, have we symptoms that can be in any way associated with the altered and necessarily somewhat hampered motor functions of the organ. So then, I think, we may as reasonably disregard this factor in the operation as we did that of the bimucons fistula; neither, of themselves, need be considered as in any sense opposed to the performance of a gastro-jejunostomy.

There are many other points of detail in the performance of the operation, such as the prevention of the *circulus vitiosus*, the angulation of the gut, the formation of the "spur," not to speak of the various items connected with the size, situation, and mode of formation of the orifices in the stomach and

intestine, and so on: these I shall not trouble you with. I have only been anxious to answer certain questions which, I think, would naturally arise in your minds, and which rightly ought not to be disregarded in venturing to propose an operation for a condition for which it might justly be deemed expedient but not absolutely necessary.

My conclusions, then, regarding the employment of rest as surgically effected in certain diseases of the stomach, are as follows:—

That operation should be performed—

1. In all cases manifesting any unduly prolonged vagueness in the symptoms, and in which no permanent good is obtained by ordinary remedial measures.
2. In intractable cases of hyperchlorhydria.
3. In all cases of chronic gastric ulcer.
4. In almost all cases of chronic gastric catarrh.
5. In all inexplicable cases of gastric dilatation.
6. In cases of pyloric obstruction.
7. In cases of recurrent gastric hæmorrhage from whatever cause.
8. In cases of acute gastric dilatation.

COLON.

I now ask your attention for the consideration of rest as surgically accomplished in the treatment of certain chronic affections of the large bowel and rectum. The colon in one sense might be likened to the stomach inasmuch as it subserves largely the function of being a storage receptacle for the intermittent discharge of its contents. It is, therefore, subject to a great deal of irritation, and of a kind that must necessarily vary according to the nature of the material which, for the time being, it contains, and the length of time it is retained. I do not intend to go into the various causes which may give rise to either inflammation or ulceration in these particular portions of the intestine: it is sufficient for my purpose that they do sometimes become chronically affected with one or other of these conditions; and that every known effort fails to give the relief required or cure the disease. It is hardly possible to conceive of a condition of things less fitted to bring about the cure of an ulcerated or inflamed surface than that which exists in the colon and rectum. There is not only the actual contact of the septic contents of the bowel upon these diseased surfaces, but the constant irritation to which they are subject every time a movement takes place.

It is not, therefore, difficult to understand how our efforts often fail in the face of such baneful influences. Rest, under any other circumstances, or in any other place, would naturally suggest itself as the most appropriate treatment; and why not here? It is easy enough to attain. We have but to open the bowel and drain away its contents through the artificial orifice to give exactly what is needed. But there has long been a prejudice in the minds of many that an artificial anus is a particularly disgusting and unendurable condition; that the remedy, indeed, is worse to endure than the complaint. Surgery, however, has not stood still in the matter. We can now make our artificial anus in such a way that if it is to remain permanent, the operation can be so performed as to give the patient some control over the escape of fæces; while if it is only to be temporary, the orifice can be so made, that closure when required is easily effected, and the normal passage re-established. That part of the subject, however, with which I am now dealing concerns the giving of temporary rest to the colon or rectum, in order that it may recover. The affection, it is assumed, is one in which the drainage and complete rest of the part will effect a cure.

We have not yet, perhaps, reached the knowledge we ought to possess regarding the forms of chronic inflammation and ulceration which affect the colon, or the differential symptoms to which they severally give rise. But there is one condition at least with which we are perfectly familiar, and which has already been more or less successfully treated in the way here discussed. I allude to chronic ulcerative colitis. The condition is a very intractable one, but the rest which the colon obtains by the formation of an artificial anus in the right iliac or lumbar region, alone renders recovery possible.

There are, I believe, other conditions which might with advantage be treated on the same principle of artificially instituted rest. For instance, we occasionally meet with a dilated condition of the colon. The cause is often difficult to determine. Sometimes it is described as idiopathic. In most cases where the dilatation is at all marked, a fatal issue sooner or later follows. Temporary improvement appears to be obtained by injections, but often, I believe, more harm than good is done in the end by the additional over-distension to which the bowel is subjected. It is possible that with a prolonged period of rest, the colon might contract and recover its normal state.

RECTUM.

In the case of the rectum it is mostly with ulceration of some kind that we have to deal. Whether it arises from syphilis, from tuberculosis, or from some other less recognised and known cause, it is generally a very distressing condition, often a very painful one, and always very intractable. To make a sigmoid anus in these cases is at once to turn the faecal current completely off its natural channel and to allow the remainder of the bowel perfect rest. But more still is gained, because it now becomes possible to do what was never possible before, to wash and cleanse these diseased surfaces, and to apply any remedial agent we please. I could give you examples from my own practice of each of these three conditions, syphilitic ulceration, tubercular ulceration, and multiple papillomata with ulceration, where the patient has been afforded the most striking immediate relief; and where healing of the ulcerated surfaces was accelerated by first daily washing out from anus to artificial orifice with permanganate of potash solutions; and occasionally using also solution of peroxide of hydrogen. In one case a weak solution of nitrate of silver was employed with advantage.

A few words, lastly, upon the operation itself. In the first place, the formation of an artificial anus is a very safe operation, and one easily executed. In the second, whatever method is adopted, it must ensure the escape of all faeces, so that nothing passes onwards to disturb the perfect peace of the distal portion. It is utterly a mistake to use the word colotomy in this connection. Indeed, with our modern nomenclature of operations upon the various regions of the alimentary canal it ought to be abolished for all descriptive purposes except that of opening the colon and closing it again at the same operation. To open the colon in such a way as to form what is practically a faecal fistula is to perform a colostomy. What, however, is to be understood here is not a colostomy, and certainly not a colotomy, but the bringing out and opening of the bowel in such a way that *all* the faeces escape from the artificial orifice.

CONCLUSION.

In conclusion, let me briefly summarise the methods by which rest can be efficiently obtained for the different regions of the alimentary canal when affected with certain intractable diseases or particular gross lesions.

1. The œsophagus is given rest by the performance of a gastrostomy; the gastric fistula is one which will close at any time when it is deemed advisable that it should do so.

2. The stomach is given rest by the performance of a gastro-jejunosotomy; the gastro-jejunal fistula subsequently either closes or remains open according to the patency of the pyloric orifice.

3. The colon is given rest by the temporary formation of an artificial anus in the right iliac region (a cæcal or right colonic anus).

4. The rectum is given rest by the establishment of a temporary artificial anus in the left iliac region (a sigmoid or left colonic anus). In both these last instances the artificial orifice can be closed when this is considered needful.

I do not doubt, gentlemen, that you will all agree with me in the principle which I have sought to establish this evening, that "Rest" is the essential requisite in the treatment of most chronic affections of the alimentary canal; but many, I fear, will not so readily accept the practice by which I have ventured to propose it should be attained. However, I can only hope that when face to face with some of these intractable cases you will remember that surgery, if considered even only as a last resort, may possibly do something to help you; and the more your knowledge increases in the value of surgical treatment, the more certain I am that you will come to appreciate the inestimable boon of operative intervention in every single instance for which I have this evening ventured to offer a plea.

RECENT ELECTRO-THERAPEUTIC WORK IN MEDICINE AND SURGERY.¹

By JOHN MACINTYRE, M.B., F.R.S.E., F.R.M.S., M.I.E.E.,

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Otological Association; Ex-President, London Roentgen Society;
Editor, *British Journal of Laryngology, Rhinology, and Otology, &c.*

LAST session I gave a demonstration to the members of the Glasgow Medico-Chirurgical Society upon this subject, and to-night I venture to give another, my justification being that it

¹ Second Demonstration to members of the Glasgow Medico-Chirurgical Society on 3rd October, 1902.

is one which continues to attract an ever-increasing number of workers, while the results of the past year's work have more than confirmed some of the favourable hopes and opinions expressed at that time. Further, as might have been anticipated, the development in *technique* has been great, and many improvements in methods and apparatus have been recorded.

The word *technique*, however, reminds me of criticisms, no doubt to some extent justified, which have been more than once offered to me by some of my friends, viz., that the subject being so new it is easy to make one's remarks too technical. In the hope of doing what is possible to avoid this, let me explain that, as upon the last occasion, I shall again to-night briefly refer to the theories and principles underlying these methods of treatment, and then pass on to some points of interest in connection with, firstly, new apparatus; secondly, the methods of application, and the selection of these in different cases and affections; and, lastly, clinical results. Speaking of the last, let me point out that last session I referred briefly to the possibilities of these forces being employed in the therapeutics of malignant affections; to-night I shall refer more particularly, although not exclusively, to these.

Let me throw upon the screen the same series of spectra which you saw last session. The first produced is the time-honoured one, produced by white light being split up into the red, green, and violet waves, the others are largely diagrammatic and show that all the forces we know of, whether they be *x*-rays, radiations as described by Becquerel, ultra-violet rays, violet, green or red light, heat or electric rays, are now to be regarded as transverse waves in the same medium or ether. The length, type, periodicity, and relationship to each other I have already described, and these can be found in the *Transactions* of the Society for last session. Many of these waves we now employ in medicine and surgery, but mainly the *x*-rays, light, heat and electric waves. All of these can be demonstrated in such a way as to show that there are varieties in each group, and some of these we use, while at present we do not employ the others. That is to say, there are different kinds of *x*-rays, light waves, heat and electric waves. Understanding these principles, therefore, we simply ask ourselves what each form of apparatus is supposed to demonstrate, and this brings me to the series of instruments which I have brought with me to-night. Last session I showed you different models or apparatus for each force, and

to-night I will take them up in the same way, but each instrument will be different from that shown last session. The advantages and disadvantages will, as a rule, be mentioned by way of comparison, and it will be seen that in many considerable improvement has taken place.

APPARATUS.

Light Treatment.—During the past year improvements have been made in the apparatus for producing light waves described at the last demonstration. One of the best known forms—the Dermo lamp—has been rendered in several ways more serviceable, especially to practitioners. This lamp has iron electrodes, with the result that one gets a very efficient beam of violet or ultra-violet light. It is a modification of Bang's lamp. At the hospital we have been largely using the Lortet-Gounod lamp, which has also been slightly improved, but in both lamps the circulation of water for cooling is within the lamp itself, or in the system of lenses. In the former it takes place within the iron electrodes, and in the latter immediately in front of the lens, which, in both cases, is of quartz. Finsen continues to record successful results. It may be noted that he has never departed from the original method, which consists in keeping a water-cooling cell actually in contact with the tissue to be operated upon. The advantage of this lies in the fact that the anæmic condition of the parts, while the rays are acting upon them, can be better controlled. A patient must be very carefully watched with the Lortet-Gounod or Bang's pattern, because he is apt to get tired, and so relax the pressure necessary to produce the anæmic condition upon which Finsen has placed so much stress. We must remember that in his original experiments he tried the effect of passing the violet rays through the lobe of the ear with and without pressure, and proved that their action upon a photographic plate was much more rapid when pressure was exerted. This was due, as he thought, to the red blood being pressed out of the parts, and not stopping the violet rays. Indeed, Finsen has recently produced a modification of his original apparatus, which is less costly, but which he believes to maintain the advantages of the original lamp, and which, while it has all the advantages of some of the other modifications of his apparatus, possesses the one referred to at the same time.

By way of experiment I have tried how far the ordinary

incandescent gas lamp, with its well-known mantle, can be utilised so as to produce violet rays. The makers of these mantles know well that pure oxides of the rare metals often do not give as white a light, or, as they put it, as much illumination as when the oxides are slightly mixed with some impurity. Knowing this fact, I have tried several of the oxides, spraying them, in solution, upon the mantle, so as to produce violet colour. The water-cell used is a modification of Finsen's original one, and it may at once be said that

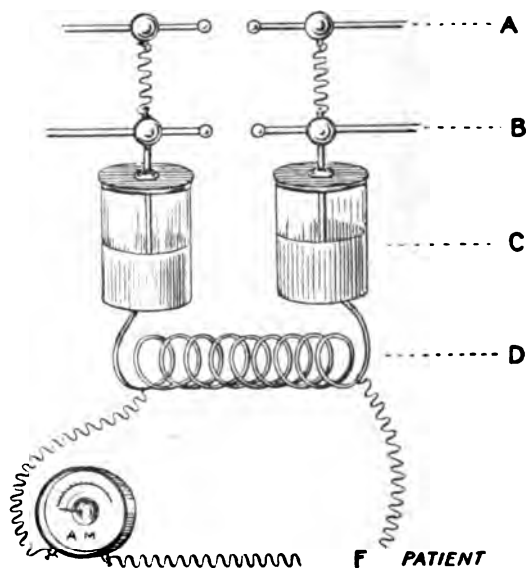


FIG. 1.

DIAGRAM OF HIGH-FREQUENCY CURRENTS.

- (a) Terminals of coil or static machine, (b) adjustable spark-gap, (c) Leyden jars, (d) helix, (e) milliammeter, (f) patient.

in a small degree, and for limited lesions, this acts; though much less efficiently, as one can understand when one thinks of the small candle power compared with the arc light. The disadvantage, of course, of this lamp is that it must remain vertical, but the compression of the parts being made by means of a quartz cell with water circulating through it, the compressor is quite independent of the lamp. Its only

conceivable advantage would be where one had no electric light, but a good supply of gas.

HIGH-FREQUENCY CURRENTS.

A considerable amount of difficulty seems to exist in reference to this form of electric work. In the simplest

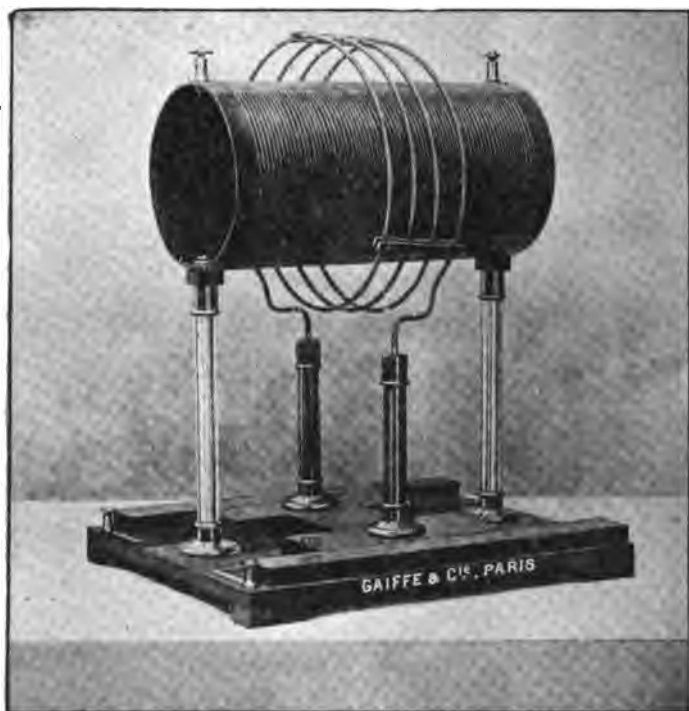


FIG. 2.

D'Arsonval's high-frequency apparatus (Gaiffe).

form it is easily understood. In the diagram before you it is seen to consist simply of two Leyden jars with a helix of wire, which is attached to the outer coatings (Fig. 1, p. 344).

The discharge is effected by bringing the inner coating in connection with the induction coil or static machine. The inner coatings should have terminals with knobs capable of

being adjusted. When the condenser or jars become charged, a discharge takes place across the spark-gap, and oscillations are set up in the spiral, hence the induction may be compared to what takes place in the primary circuit of an induction coil. These currents were first thoroughly investigated by

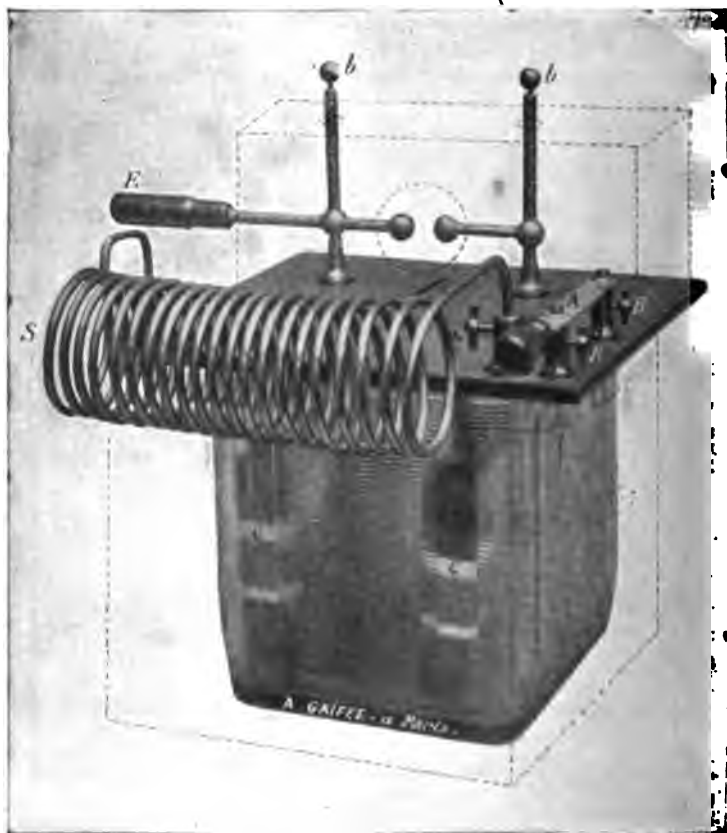


FIG. 3.

Oil condenser for high-frequency apparatus instead of Leyden jars.

D'Arsonval, and they can be produced by means of the coil, the static machine, or the alternating currents, provided in a certain way they fill and discharge condensers. A current where the periodicity is frequent, varying from two thousand to a million per second, is called a current of high-frequency.

Remember, however, that although discharges vary in appearance the differences are due to (1) frequency, (2) magnitude, and (3) the kind of wave of the electro-motive force employed in producing them. Tesla has advanced this by putting a secondary coil of wires round this primary or helix, and immersing the whole thing in oil.

The model which I am bringing specially before you to-night was made for me by Gaiffe, of Paris, and has been built upon the lines of D'Arsonval's original apparatus (Fig. 2, p. 345).

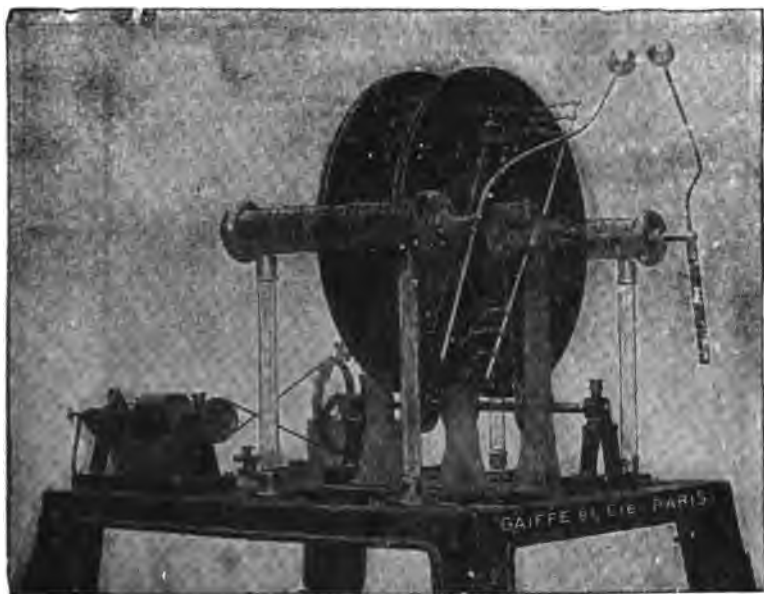


FIG. 4.

Gaiffe's sectorless Wimshurst machine.

It differs somewhat from this other specimen and improved form of Dean's, one of which I also showed you last year. In this case the primary is outside of the secondary. It has also a very different arrangement of condenser. The latter (Fig. 3, p. 346) consists of plates of glass with layers of tinfoil, the whole being immersed in paraffin oil. As I have said, high-frequency apparatus may be excited by the static machine or induction coil, and it is said that the physiological action in the two cases differs. When the static machine is used, however,

it is customary to use a smaller size of instrument and a suitable condenser. This apparatus is good, and affords a very simple way of showing what is understood in the French school as the active and passive discharges. I will show you how these are produced, and the difference is due to the fact that in the former case the current is passing in the same direction as that in which the coils of the secondary wire are wound, while in the latter the current is passing in the opposite direction. The physiological action seems to be different, as is also the therapeutic, when we employ these two forms, and we can

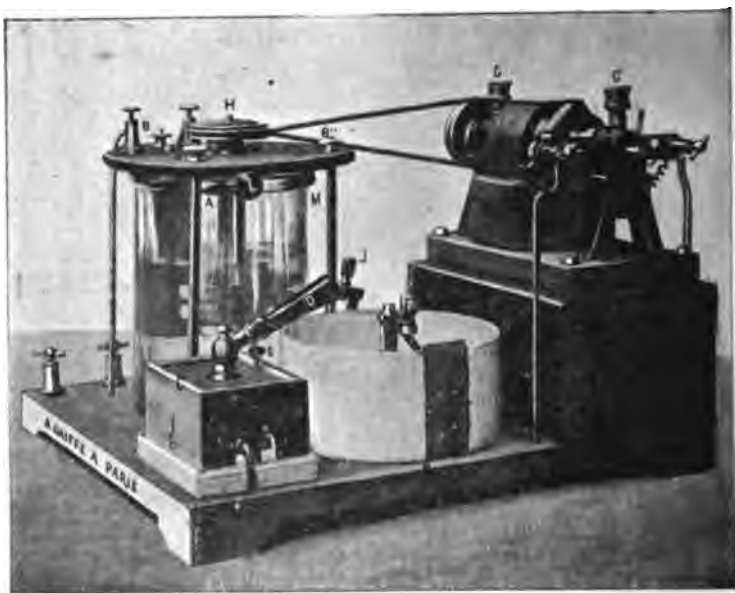


FIG 5.

Contrémoullins-Gaiffe interruptor.

produce them at command by simply reversing the direction of the primary current going into the coil. Specimens of all the apparatus necessary for giving these, whether by means of the static machine or induction coil, I have brought with me to-night.

HIGH-POTENTIAL CURRENTS.

In last session's demonstration I showed you a model of a large Wimshurst machine, made by the inventor himself,

which I have for years employed for diagnostic and therapeutic purposes. To-night I am showing you a variation of this—a sectorless machine as it is called (Fig. 4, p. 347). This model is made by Gaiffe, and the one I employ consists of ten plates made of vulcanite, not glass, and was also built by Gaiffe, of Paris. The disadvantage of this machine is that it takes time to be excited, but its advantages are very great.

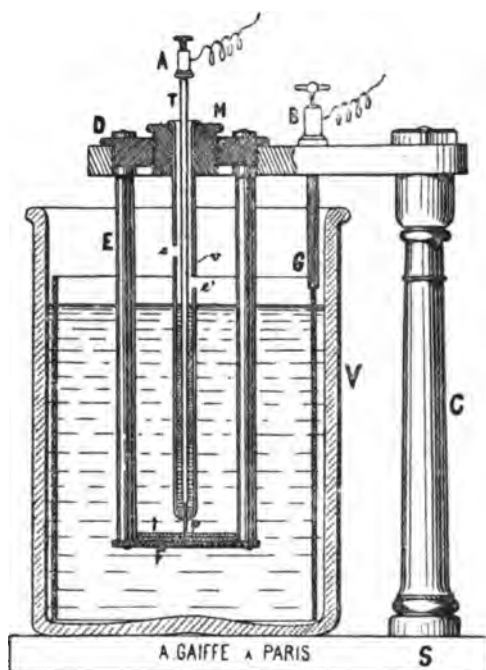


FIG. 6.

Improved Wehnelt interruptor.

In the first place, ebonite plates can be driven at a much greater speed without risk of breakage—1,000 revolutions per minute. It is strongly built, a point of importance nowadays, and gives an enormous torrent of sparks of unusual length considering the diameter of the plates. I have found it specially useful in producing high-frequency currents when exciting by means of a static machine.

ROENTGEN RAYS.

Many improvements have to be recorded in this apparatus during the past year. For example, the primaries of coils have been split up into different layers, so as to suit them for the Wehnelt, mercury, or other interruptor, and many of them are now being constructed in accordance with the principles which I laid down five years ago, one of which was that the primary should be able to carry great amperage. Again, in interruptors we have a new one, the Contrémoulins-Gaiffe, and

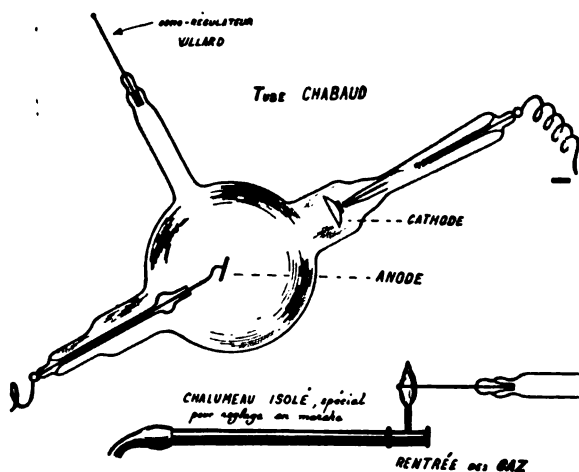


FIG. 7.

Crookes' tube—Chabaud-Villard pattern.

this interruptor gives a great power of gradation (Fig. 5, p. 348). As we turn the handle to the right or left we can decrease or increase the length of spark, and as the contact is made without mercury, and under oil, the current from the mains can be used with safety. The same firm now makes an improved Wehnelt interruptor, which runs for long periods without stopping (Fig. 6, p. 349).

Of late I have used a new and interesting form of Crookes' tube, the Chabaud-Villard, one of which is shown to-night (Fig. 7). Last session I showed one by

Queen, of Philadelphia, which, like others, such as Müller's, enabled us to vary the vacuum. In this case, by simply heating the small platinum wire springing from the side of the tube, or a platinum tube over the wire, by means

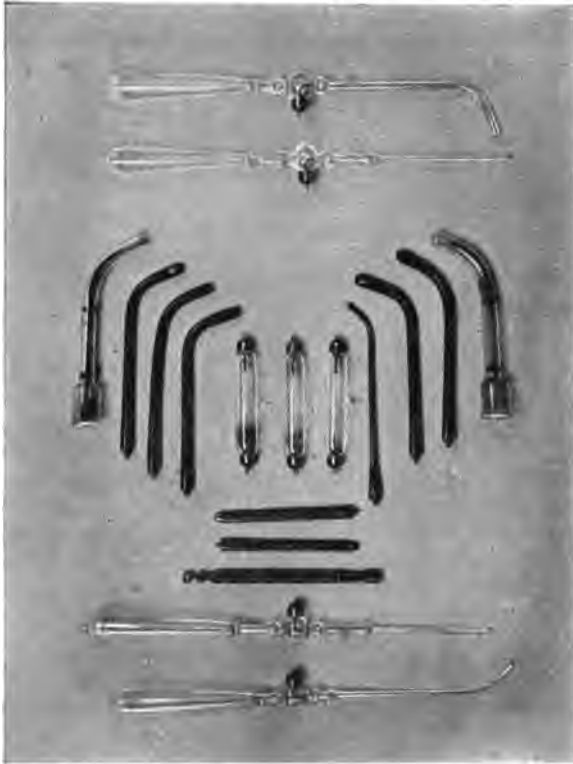


FIG. 8.

Macintyre's electrodes for nose, ear, and throat.

of a Bunsen burner, one can drive in or take out air, so as to keep the vacuum constant. Further, by means of an ingenious arrangement of different thicknesses of metal, Benoist, of Paris, has given us a small radiochromometer, by means of which we can read off in figures on a dial the power of penetration which any tube possesses. Holzknacht, of Vienna, has given us also a chromradiometer for measuring

the quantity of rays absorbed by exposed substances in radiotherapy.

ELECTRODES.

In no part of the apparatus has there been greater diversity of form exhibited, or greater improvement made, than in electrodes. I show you in one case a complete series of glass and vulcanite electrodes which were specially designed by me



FIG. 9.
Electrode by Bissérie.

for applying the static, or still better, high-frequency currents to the cavities of the nose, naso-pharynx, and parts in the neighbourhood of the larynx (Fig. 8, p. 351). By these one can, to a certain extent, limit the action to a small part of the mucous membrane. Again, I have placed a large number of electrodes before you for applying high-frequency current to other cavities of the body, and also to the surface, either in a limited area, or when we are attempting to stimulate the organs or parts below the surface. Let me again point out that a healthy scepticism is quite legitimate with regard to statements made about the high-frequency currents getting through the superficial into the deeper

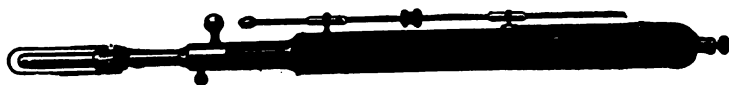


FIG. 10.
Electrode with spark-gap by Bissérie.

structures. These electrodes you may see after the demonstration, but let me select one or two which are specially worthy of notice. The first (Fig. 9) is that of Dr. Bissérie, in which there is a glass cover round the metal points, which limits the action to a certain area, and, secondly (Fig. 10), one with a handle with a small spark-gap, made by the same writer, and enabling one to make a connection to earth by wire or by the operator's body. By this means one can easily vary the intensity of the discharge.

CONSIDERATION OF METHODS.

The selection of a particular method in a given case is by no means an easy matter, and it sometimes happens that after one form has been tried it is advisable to try another. Doubtless we are coming to understand better what each can do, but as they have all now obtained a place in our work (because there is no longer doubt as to the efficacy of most of these methods in certain cases or affections) the necessity for using one only to the exclusion of others is no longer forced upon us. In the experimental stage of any method of treatment, it is, of course, advisable to try one to the exclusion of all others, in order to get an estimate of its true value. There is now no reason, however, why a patient should not have at different times in the progress of a disease different methods tried: thus at one time one may employ x-rays, and at another high-frequency or light treatment. Of course, this principle is not to be recommended where it can be avoided, but within limits such a practice is quite justifiable.

Again, one may be guided by the individual, his or her idiosyncrasies, or the state of the general health and also by the site and extent of the lesions. Sometimes reaction comes on too rapidly to be easily controlled, and the patient may be subjected to unnecessary suffering. Again, it is difficult to apply violet rays within cavities, whereas high-frequency or high-potential currents can often be introduced into the nose, throat, or even the gullet, and, of course, the same rule applies, to a certain extent, to some organs within the pelvis, or lower part of the bowel. When we have a large surface of the body to attack, the light treatment is too tedious, and the static machine, or high-frequency apparatus may act as well as over a large area. The acute or chronic nature of the disease, the duration of each sitting, the length of time which may be required to heal the tissues, must be taken into consideration in the selection of a particular method in a given case; and, lastly, there is the experience of the operator. I have no hesitation in saying, that as one becomes more familiar with these forces, successful results can now be predicted in cases which, at an earlier period, would have been considered hopeless. Speaking generally, I think I would be justified in saying from my own experience that the most powerful agent of all, in limited lesions, is the Crookes' tube, excited by the induction coil. Where we have large surfaces to attack, I have found the high-frequency or static breeze most useful, and in acute affections,

such as those of lupus erythematosus, I have had excellent results with the Wimshurst machine applied after the manner described at the time of my last demonstration.

CLINICAL RESULTS.

Lupus.—Last year, when speaking to you of the application of light, high-frequency, high-potential, and Roentgen rays in the treatment of this affection, I had no hesitation in stating that the positive results then obtained were sufficient to show that we now possess new and efficient agents in combating the results of this affection. The most recent reports of Finsen's work is more than confirmatory of his earlier endeavours. In the literature we read from an increasing number of centres of successful results, even in cases where every other method had been tried and failed. To a certain extent the same remark may be said of high-frequency currents and Roentgen rays. Of course, there are failures if the test is to be considered absolute cure, and certainly it is right to state that there are also recurrences, but when one makes these statements it should be remembered that the same can be said of any method of treatment in this or other affections.

In no part of my demonstration to-night am I entering upon the comparative results of old and new methods, preferring, as I do at the present moment, to state frankly where I have had success, amelioration, or complete failure. My own experience during the past year confirms what I stated before, and while I am bound to say that I oftener employ the Roentgen rays than Finsen's light, nevertheless the same is true of both forces in the treatment of lupus.

Let me show you on the screen a number of photographs illustrating different conditions. In many of those cases the results have been very gratifying, and are just what other workers have been able to record. I might select, however, a few of these for special remark. Here is one, of a patient aged 20, who suffered for eight years from lupus of the nose, throat, and face, and who had had many different methods tried without success, including surgical procedure and tuberculin injections. In extent, the disease extended from the eyes through the nasal cavities down as far as the region of the pharynx and larynx. The treatment took about six months to bring about healthy changes. Comparing the deformity at first, with the result I now show you upon the screen, there can be no doubt of the efficacy of the methods, which were a combination of *x*-rays and light treatment. I

have had other cases still more difficult. One of thirty years' duration, now very much improved and still under treatment, yielded to no other method, although many were tried, until the two referred to were applied. Again I may instance a patient referred to me from London, a lady aged 54, who had suffered for forty-six years from lupus. In this case the disease covered the whole of the face, neck, lips, and mouth; one eyeball had been destroyed and removed, and the sight was practically lost in the other eye. Needless to remark, many methods of treatment had been tried, and she had been refused light treatment by one authority because of the extent, duration, and site of the affection. She would not have undergone any treatment had it not been for the distress and pain in eating becoming unbearable. Last week, after six months' treatment, she left me for home, with the mouth perfectly well, skin and mucous membrane healed. With the exception of a small granulating part about the size of a threepenny piece left uncovered on the side of the cheek, she may be considered well. I anticipate this has healed by this time; if not, she is to return for further treatment. I have had many cases of lupus of the nose, throat, and face under observation, very few of which have not benefited, whilst in the majority the parts have completely healed.

Rodent ulcer.—If there be any affection which has given more promise than another during the past year it is rodent ulcer. No one who reads the reports in the journals, or who has seen the photographs showing results published in many of the papers, can doubt for a moment that, just as in lupus, most serious cases have been effectually treated by means of one or other of these forces. The reports continue to accumulate from many different medical schools, and cases of long duration and extensive area, some of which had been operated upon previously by the surgeon, have yielded to the influence of the *x*-rays. It is right again to state, however, that there have been failures not unfrequently where surgical procedure had already been tried, and worst of all where the bone had become diseased. The most disappointing case in this respect which I have had personally under observation was one sent by Dr. Campbell, of which there was practically no benefit to record after a fair trial of both high-potential currents and *x*-rays. Here, the side of the nose was involved, and with it the superior maxillary bone. I may say that in rodent ulcer I now mostly employ *x*-rays, the static machine, or both, preferably the former.

The most successful case is one which has never required treatment since the parts healed three and a half years ago. This case was mentioned in my last year's demonstration, and the patient had been previously operated upon three times, only to suffer from rapid recurrence.

Malignant disease.—Last session, when speaking of malignant disease, I said I approached the subject with every sense of responsibility, and to-night I preface my remarks by emphasising all that was stated at that time. Nevertheless, as in the two affections of which I have already spoken, the results of the past year's treatment have been such as not only to confirm what was then stated, but also to enable us to say that continued favourable reports in a few cases have been received. Moreover, a more hopeful feeling is beginning to prevail as to the ultimate possibilities of cure, even if temporary, where the disease is situated on the surface, or within the cavities where one can reach it by suitable appliances.

In order, however, to make the subject perfectly clear, let me point out that a careful examination of what are claimed as successful results reveals the fact that most of the so-called "*superficial epitheliomata*" or "*superficial carcinomata*" are just what you and I understand by the term rodent ulcer. I need hardly say that as these names get copied from the medical into the lay papers, the term cancer is easily substituted for either, and this confusion in nomenclature leads to the founding of hopes which cannot be realised, a fact in every sense to be regretted. The term cancer is an unfortunate one, because, as we all know, it originally included many different affections which a better pathology has taught us to classify as carcinoma, sarcoma, &c. Some teachers have observed that it would be no great loss if the word could be stamped out of our literature. In any case, when classifying diseases which are being attacked by experimental methods as we are now doing, it should never be forgotten that rodent ulcer, although generally regarded as a form of carcinoma, differs so much from carcinoma in its growth, dissemination, glandular involvement, and rare recurrence that clinically it may be safely kept apart from the others. Pathologically, and even microscopically, its characteristics are so different that such cases should be kept in a class by themselves. With these we have already dealt, but the question arises, when we come to the more serious affections accurately classified under the heading of carcinomata, have we any

evidence to show that even in a few cases any one of the agents of which we have been speaking to-night has produced a beneficial effect? The accumulating evidence of the past year seems to be such as to justify us in being somewhat more hopeful.

Malignant cases which come under observation might be classified, as far as treatment goes, into those in which the results have been complete disappearance of the tumour—very few in number; cases in which no cure was expected, or, if expected, was not obtained; and, again, cases in which, after a fair trial of one or all of the methods, no benefit was obtained. Let me bring a few of these under your observation.

A lady, aged 58, consulted me two years ago on account of a tumour which had appeared in the nostril and under the upper lip. The disease was of thirty-eight years' duration, but it was only within the last three years that it had become extremely troublesome. It had been diagnosed previously as lupus, but it was apparent that the growth at the time I saw it was malignant. I had consultations with Dr. Morton, of Glasgow, and others, and she was ultimately sent to London to see if light treatment would be of any use. The diagnosis of epithelioma supervening was accepted by all, and for nearly a year I saw nothing of her. At the beginning of this year she called to tell me that she had been refused light treatment, but the skin of the face had slightly improved under the *x*-rays. On examining the patient I found that a large neoplasm, filling the whole of her nostrils, had appeared. It projected forward to the outside skin of the nostrils, had involved the hard and soft structures throughout the nostril, and was projecting into the naso-pharynx. The alæ were distended, the tumour was dark red in colour, there was abundant discharge of a muco-purulent nature, and occasionally slight hæmorrhage: the mass had begun to ulcerate, and had extended behind the lip to the gums by the incisor teeth; all sense of smell had been lost. On account of the situation I cannot show you a photograph, except of the external parts, but even this gives evidence of the serious nature of the disease. She was treated by means of the static machine and *x*-rays daily for a considerable time, and, in all, has been under treatment something like six months, although from time to time, owing to reaction, there have been intervals of a week or ten days' duration. For a long time the results were disappointing, but at last it began to show signs of breaking

up. Bit by bit the tumour diminished in size, and after three months' treatment she began to breathe through an opening in the left side. The tumour gradually disappeared, the sense of smell returned, and now, although the septum and the turbinated bones have been removed, the inside of the nose is perfectly free, the mucous membrane has healed, and the sense of smell is as good as ever it was. The lesion under the upper lip has also disappeared. In this case the tumour has been entirely removed, but I will keep her under observation for a considerable time yet, although she is not having treatment.

The second case to which I wish to call your attention is one of malignant disease of both breasts. My own work being limited to the nose and throat, I merely advised the treatment which has been carried out by Dr. Donald under my supervision.

The patient, a lady aged 65, had been seen by Dr. Nicoll, and was sent me by Dr. J. P. Boyd. Both mammae were affected, and to such an extent that operative procedure was deemed impossible. She was suffering great pain, and the case was undertaken with very little prospect of success. On the right side the breast was greatly enlarged, and the disease had burst through, forming a large proliferating mass, about the size of an egg, ulcerating, and covered with offensive discharge. The mass itself was dark in colour, and round it, throughout the breast, were large, dense, indurated nodules.

Originally the case had been diagnosed as a bad form of Paget's nipple. There was œdema, although the glands were not seriously involved. On the other side, the same conditions had been present, but, instead of the tumour above described, there was a large sloughing ulcer perforating down to the pectoral muscle. There was also abundant offensive discharge, and round the lesion some dense indurated masses of disease were scattered through the breast. She has been six months under observation, with the following results. The first indication of improvement was the cessation of the lancinating pain, which disappeared altogether within a fortnight. The discharges which soaked through the dressings and the clothes began to dry up. Next the tumour began to break up on the right side, and it gradually disappeared. Later on, the ulcer on the opposite side began to fill up. The next important step was the observation of the indurated masses on both sides and subsidence of the œdema. The right breast is now entirely skinned over, but there is a little redness, as you will see from the photograph, due to a slight

moisture, but the breast is in size and touch to all intents practically normal. The ulcer on the left side has not yet quite healed, but the breast itself is soft and improving. The patient has left for a fortnight's holiday, but she will be kept under observation on return. Drs. Nicoll and Boyd have both seen her lately, and confirm the great change which has taken place on this patient.

Of the second class of cases I have had a number. Last year I mentioned two, one of which was exceedingly serious, and of him I said, that the only change I noticed was breaking down of the malignant mass. While under treatment he caught a chill early this year, and died of pneumonia. The other case to which I referred last year, in which there was malignant disease of the lower jaw, has been better. In his case I think it may safely be said, that the tumour not only diminished in size, but that it was for a long time arrested. You will remember in this case there was an aneurysm of the aorta. He left me early in the spring to go to the south of England, and for a long time was laid up with gout and sciatica. The break in the treatment caused an extension of the disease, although those who saw him before he came from London admitted on his return that the tumour was much less in size than when he began treatment. He has now returned for a second course, and locally the tumour is still less than when I saw him twelve months ago. He can still open the mouth with perfect freedom, which he could not do at his first visit; he has been perfectly free from pain except when a sharp reaction took place, and he is still under observation. In other cases, all that has been obtained is cessation of the pain, but to the alleviation of this, and improvements in symptoms, I shall refer later in the evening.

Of the last class of cases, I have had a number, and the one of which I now throw a picture on the screen is typical. In this case the patient had epithelioma of the nose. I had first removed the tumour by excision, and it recurred. The different methods of treatment to which I have referred to-night, were all tried, without the slightest difference being made in the progress of the disease. The glands of the face and neck became rapidly involved, and as far as this case is concerned, it proved a complete failure.

Some things which take place during treatment are worthy of special remark. The most striking one observed by different workers, even in cases where healing is out of the question, is the effect upon pain. Within ten days, or

a fortnight in some cases, where the suffering has been intense, it partly or wholly disappears. The darting, lancinating, typical pain often completely and suddenly ceases, explain it as we may. Surrounding tissues that have been seriously involved and are suffering from pressure are also relieved. Indurations, which one would scarcely expect could possibly be got rid of, also subside, and in some instances when they are at a distance from the original lesion. The organs, or underlying tissues, become natural and soft in texture. Edema sometimes rapidly subsides, and glands, even distant ones, it is stated by one writer, Dr. Morton, disappear. Lacerated surfaces become replaced by healthy tissues and coverings, small simple scars ultimately taking their place. The offensive smells leave as the discharges cease, and the last-mentioned word reminds us of the eczema of the breast to which older surgeons refer. I regard the complete cessation of discharge as of great moment, because as long as it is present it may indicate, not a cause of irritation, but rather the evidence of some malignant irritation of the epithelial coverings or the linings of the ducts or glands. For this reason I think that patients ought to be kept for long under observation, and that treatment should be continued for a considerable time after all pathological changes have apparently ceased to exist.

Of course, there are disadvantages in these methods of treatment, and too often disappointments likewise. For example, one may get a part to heal on the surface, while at a distance other organs may be involved which cannot possibly be reached. Further, the treatment is slow, and reactions are sometimes painful, although these, I believe, should be carefully kept under observation and not allowed to proceed too far. It should ever be remembered, however, that the cases which have hitherto been tried form as bad a series as one could think of, many of them old-standing, others having been operated upon, not a few being bad cases of recurrence, with all the evidence of advanced malignant disease, including cachexia, and yet in some of these some benefit has been obtained.

We do not know how these forces act, although we have had plenty of theory upon the subject. In some affections, such as lupus, many workers have based their ideas on the bacteriological origin. This is notably true of the light treatment, where Finsen tries to obtain bactericidal action. I referred to this question last year, and pointed out the conflicting views of different authorities as far as the x-rays

were concerned. Some of them, such as Wolfenden, declare that micro-organic life is stimulated rather than destroyed—that is, speaking of cultures, which may be quite different from organisms within the tissues. Others have tried to reconcile the two views by saying that the first action of the *x*-rays stimulates growth, but the reproduction becomes in the end so rapid and great that the organisms die. That they stimulate, and so enable the tissues to cast out micro-organic life is possible, but, after all, we are dealing with matters of theory. There is another view, however, which may be kept in mind to which I wish now to refer. It is generally assumed that most neoplasms are built of tissues of low vitality, and it may be that these die first under the influence of such forces as the *x*-rays, and so enable the normal and surrounding tissues to resume their functions. It should be remembered further that, in the present stage of our studies, while we believe lupus to be the result of micro-organic life, we have as yet no evidence of this in the production of malignant disease. Explain it as we may, the fact remains that in a certain number of cases, diseased tissues (with healthy ones in the vicinity) subjected to these rays are removed, and the normal function of repair is carried on.

What we have described in the disappearance of malignant tumours as seen by the eye, is confirmed by microscopic examination. Sections of ulcers seen under the microscope show that the epithelial new growths infiltrating the tissues disappear; a process of degeneration of some kind takes place in the nuclei first, and afterwards in the cells themselves. Presumably by some process of absorption the resulting matter disappears, and this is followed by granulation, and later by superficial epithelial covering of the normal type.

In conclusion, let me say that I have studiously avoided all attempts at comparative results in to-night's demonstration. I mean by this, comparison between the forces of which I have been speaking and the older ones with which we are familiar. I might have dwelt upon the fact that in many of the cases recorded in the literature, every other well-known method had first been tried and failed; or, again, upon the fact that the scars which result from the new methods are specially interesting on account of the slight deformity which results. I have, however, preferred not to do this, believing that the time has not yet arrived for forming a conclusion. Again, I think it right to say that in malignant cases, where surgical procedure can be offered to the patient, in the present state of our knowledge I would not advise that any of these

forces should be recommended in the first instance. At present it is better to try them only in those cases where the patients have refused operation, or where the surgeon does not see his way to recommend it. I have referred to other workers in the course of my remarks, and reference will be made to them when this paper is published in the *Transactions* of our Society. Meantime, let me throw upon the screen a number of photographs of patients suffering from the affections to which we have been referring, and which may serve to illustrate what I have tried to convey in my remarks. In a number of these you will see that gratifying results have been obtained; in others, that relief to suffering was all that could be claimed; and, lastly, in others, that all attempts at treatment resulted in absolute failure.

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CASE OF PERICARDIO-MEDIASTINITIS, ASSOCIATED WITH TUBERCULAR PERITONITIS AND ASCITES.¹

By JOHN LINDSAY STEVEN, M.D.

THE specimens which are shown to-night consist of the thoracic viscera, the liver, and intestines, illustrating that diffuse form of chronic inflammation of the great serous cavities which ultimately leads to great circulatory disturbance and the occurrence of severe dropsical affections.

They were obtained from the body of a female child, æt. 9 years, who was under observation more or less continuously in Ward VIII for a period of four months, extending from 30th July, 1901, till 25th January, 1902, and of whose case the diagnosis recorded during life was pericardio-mediastinitis, with severe dropsy of the lower extremities and of the abdominal cavity. For a lengthened period, during the observation of the case, the question as to whether the pericardio-mediastinal inflammation was primary or secondary to the well marked abdominal lesion was left open, but finally decided in favour of the view that the thoracic disease was secondary to a chronic and probably tubercular peritonitis.

The specimens submitted show a great thickening of the parietal layer of the pericardium, due to the new formation of connective tissue and to the presence of a very thick layer of compressed fibrin.

The inflammatory hyperplasia is seen to have extended upwards into the mediastinum surrounding the great vessels. The adhesive change has also involved the left pleural cavity, so that the left lung is firmly bound to the surface of the thickened pericardium as well as to the chest wall. In the anterior portion of the left upper lobe also, numerous caseating foci are observed. The right lung is free from adhesion.

The heart is small, and is covered with a thick layer of compressed fibrin.

The same generalised fibrous adhesions—the result manifestly of chronic tubercular inflammation—are to be observed in connection with the abdominal viscera. The liver is firmly adherent by thick fibrous caseating masses to the under surface of the diaphragm and the parts beneath it. The intestines, likewise, are glued together by soft adhesions, their serous

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 7th March, 1902.

surfaces being studded with miliary tubercles. At the autopsy the great mass of the adherent bowel was found to be drawn upwards towards the diaphragm.

On opening the abdomen, also, a large quantity of somewhat turbid serum escaped from its lower part. It was notable, also, on raising the sternum, that it was unduly adherent to the underlying mediastinal tissue, which was of a very firm and dense consistence.

On microscopical examination of the visceral pericardium, the thickening was found to be due mainly to the abundant fibrin between it and the muscular bundles of the heart wall. Numerous oval or rounded collections of leucocytes, suggestive of miliary tubercles, were seen.

The patient, Mary C., was admitted for the first time on the 30th July, 1901, complaining of pain across the abdomen, and sickness of about two and a half months' duration.

From the notes obtained at that time it appears that at the age of 3 she was treated in the Victoria Infirmary for what seems to have been "tetany," and that since then she had suffered from measles, diphtheria, and threadworms, the latter affection coinciding pretty nearly with the commencement of the illness for which she sought admission.

That the affection at this time was mainly abdominal in its manifestation is proved by the circumstance that one medical man had her blood examined for Widal's reaction, and that another, just before admission, pronounced her to be suffering from "decline of the glands of the bowels."

At the time of her admission the symptoms were still mainly abdominal, though beyond a slight distension nothing definite could be made out.

On 9th August, 1901, however, Dr. W. K. Hunter, who was on duty during my holiday, detected manifest signs of pericarditis, with great enlargement, laterally and vertically, of the precordial dulness, and generalised pericardial friction over the dull area. At this time, also, some deficiency in resonance over the left lung in front was detected, with enfeeblement of the respiratory murmur, but no râles. Dulness was more marked at the left base behind where a few crackling râles were obtained. Four days later the pericardial friction had disappeared, and the cardiac sounds were noted to be somewhat muffled. On 18th August slight friction was again detected, and the cardiac sounds were audible.

Pericardial friction was still very distinct on 28th August, but on my return in the beginning of September the signs of active pericarditis had disappeared, and on the 16th I entered

the following note in the Ward Journal, describing her condition at that time:—

“ In spite of the disappearance of the signs of pericarditis, recorded by Dr. W. K. Hunter, the condition of patient has been by no means satisfactory. During her whole residence she has been exceedingly quiet, though making no complaint.

“ At first some slight swelling of the abdomen was observed, but the onset of pericarditis seems to have prevented detailed attention being directed to this condition. During last week a dropsical condition of the abdomen, with an œdematous condition of lower limbs and lumbo-sacral region, has become very marked. The girth of the abdomen at the umbilicus in the dorsal decubitus is this morning 28 inches, and, in addition to subcutaneous œdema, there is evidence of considerable peritoneal effusion. The face has a pale puffy appearance, and the child is never able to lie down. The external jugular veins are to-day observed to be knotted and engorged, as if from intrathoracic pressure, and the whole of the left infra-clavicular region is dull and resistant to percussion, the dulness merging into the cardiac, so that it is impossible to differentiate the two. Over the dull area the vesicular murmur is distinctly enfeebled though quite audible, of normal character, and without accompaniments. The heart sounds are pure though feeble, and no friction is heard. The right infra-clavicular region is hyper-resonant to percussion down to level of fifth rib in mid-clavicular line, where the upper hepatic margin is met. The dulness on the left side reaches to the middle line, but at the level of the third cartilage slopes downwards and to the right to join the upper hepatic margin midway between the nipple and the sternum. In the whole of the area to the right the respiratory murmur is greatly exaggerated.

“ Posteriorly, pulmonary percussion is resonant over both lungs, but at the left base moist râles are detected, and a distinctly tubular respiratory murmur of loud and harsh quality. Over the right lung behind, the respiratory murmur, though harsh, is of vesicular type, and accompaniments are much fewer. The dulness noted in left infra-clavicular region extends no farther back than the mid-axillary line. The child has a frequent loose, slightly suffocative cough, but expectorates practically nothing. During the first three weeks of residence slight fever of a remittent type was recorded, the maxima being in the evening about 100°. During the past four weeks temperature has been normal or subnormal, but in spite of this an extreme degree of tachycardia has been present, the pulse ranging between 120 and 150.

Tachycardia was also present before the pericardial involvement was detected on 9th August, and the remittent fever was even more marked before this date than after it. The whole character of the dropsy, the puffy appearance of the face, and the engorged jugular veins, are suggestive of mediastinal pressure, and the occurrence of a very definite attack of pericarditis lends additional support to this view. It must not be forgotten, however, that the clinical history indicates the abdomen as the primary seat of disease, and that both enteric fever and tuberculosis of the mesenteric glands had been conditions suggested before admission. It is possible that the pericardial affection has been secondary to some previous inflammatory affection of the mediastinal tissues or glands, and the condition now is probably a pericardio-mediastinitis."

This note in effect describes the phenomena of the later stages of the illness. On one or two occasions it was necessary to relieve the abdominal distension by paracentesis abdominis, but without any fresh light being thrown on the nature of the case. The patient slowly sank from exhaustion.

A CASE OF CHYLOUS URINE AND A CASE OF BLUE URINE.¹

By RALPH STOCKMAN, M.D.

I. Case of chylous urine.

The patient is aged 50 years, by occupation a lamplighter, and a native of Dalmatia. He has been twenty-five years resident in Glasgow, and for twenty of these has never left the city. Previous to that time he was a seaman in the Austrian navy, had visited many tropical countries, and had had repeated attacks of "fever." He states that he still has occasionally slight feverish attacks, which date back uninterruptedly to his seafaring days, otherwise he has enjoyed good health.

He was admitted to the Western Infirmary of Glasgow on 11th March, 1902, complaining that he had frequently passed urine of a milky appearance during the previous twenty months. About the end of August, 1900, he first noticed that his urine had a milky colour in the morning, but he paid little

¹ Read before a meeting of the Glasgow Medico-Chirurgical Society held on 21st March, 1902.

attention to it as he felt quite well and suffered no pain. This occurred about twice a week at first, but soon became much more frequent, until it was present almost every morning. About two months after its first onset he began to be troubled by a dull pain and a sense of discomfort in the small of his back after working hard, after sitting long in one position, or after exposure to cold, and this has continued ever since. On several occasions he has been unable to pass water in the morning owing to the presence of an obstruction in the urethra. This, however, has always come away after repeated straining. About three months ago, just after passing milky urine in the morning, he was seized with severe pain in the hypogastrium and a desire to micturate. After frequent attempts and much straining he passed some bright-red blood, and then the pain subsided: but for some days afterwards there was a burning sensation in the urethra whenever he made water. On one occasion his urine became thick and jelly-like on standing. In the summer, on account of his occupation, his hours for sleep were from 11 P.M. till 2 A.M., and again from 6 A.M. till 8 A.M., and during this period his urine was less often milky. He found that if he took food immediately before going to bed his urine was milky when he rose, and if he lay down after a meal during the day it showed the same condition. Except for the dull pain in his back at times, he feels quite well and vigorous. His appetite and digestion are good, his thoracic and abdominal viscera are apparently healthy, and he has no anæmia. The lymphatic glands in both inguinal regions are slightly enlarged and hard, but they are normal elsewhere.

He remained in hospital till 18th March, and during his stay the urine was passed at frequent intervals, and its condition noted. The following is one of the records:—At 10 P.M., urine was clear: 1:30 A.M., milky-white; 5:30 A.M., opalescent; 9 A.M., milky: and after this it gradually became less and less milky, until at 4:15 P.M. it was quite clear. The milky fluid does not separate into layers, it shows no deposit, and does not coagulate. It contained a good deal of albumen and fat, the latter of which could be shaken out with ether. It was always acid. The more milky the appearance, the more abundant were the fat and albumen. The clear specimens contained no albumen and no abnormal constituents, and were always lower in specific gravity—for example, 1010 as against 1015 on the above occasion. The milky urine when examined under the microscope showed fat globules, leucocytes, epithelial cells, and a very few granular tube-casts. Blood and sugar

were never found, nor any parasites. The urine was sterile when passed, but bacteria grew in it very rapidly and abundantly when it was exposed to the air. The urine was frequently of a deep milky-white appearance, but showed all grades between this and slight opalescence up to perfect clearness. On 13th March the patient had a severe headache which kept him awake most of the night. The urine passed at 8 P.M. was clear, amber-coloured, and had a deposit of mucus with oxalates; at 1:30 A.M. it was much the same; at 5 A.M. it was milky; and at 9 A.M. and 10:20 A.M. it was clear and pale with no deposit. After a heavy meal or after a large drink of milk the urine passed is very chylous in character. Repeated examination of the blood at all hours of the day and night failed to reveal the presence of any filaria or other parasite.

The chyluria comes on usually after he has been lying down for about an hour and a half or two hours, and seems to be connected with posture and the taking of food or milk, rather than with the condition of sleep or the time of day. There is evidently a communication between the abdominal lymphatics and the urinary passages, and whatever may be the original cause of this, the escape of chyle is most abundant when the patient assumes the recumbent position.

The retention of urine from which he sometimes suffered arises from fibrinous clots forming in the urethra from the albuminous constituents of the chyle, and which were forced out by straining, while the attack of urethral bleeding seems also to have been due to excessive straining. While under observation in hospital his urine never clotted.

II. *Case of blue urine.*

The passage of urine of a blue or green colour has been occasionally described by medical writers from ancient times. In one case at least, if not more, the colouration has been traced to eating certain plants. In other cases it has been shown to be due to indigo, which is formed from the indican (indoxyl-potassium-sulphate) of the urine, and which separates out in such fine particles that it does not subside: when the urine is deeply pigmented the mixture of the yellow and blue gives it a greenish tinge. Lately, Dr. Parkes Weber has stated that blue or green urine is most commonly caused by eating sweets coloured with methylene-blue, or other aniline dyes, and a glance through the recently reported cases shows this to be correct. In these cases the urine is of a clear, transparent blue or green tint.

When the colour is due to indigo this can be detected by passing the urine through fine filter-paper, which retains the small particles, and these, if in sufficient quantity, can be easily identified. In most cases also, though not invariably, the urine is alkaline in reaction.

When the colour is due to methylene-blue the urine is acid, and does not decompose readily. When bacteria grow in it, however, the blue or green colour is rapidly lost, except in the layer exposed to the air, which can absorb oxygen, and thus keep its colour. On shaking it up the whole becomes green or blue again, and this can be repeated indefinitely. The blue pigment is soluble in chloroform and amylic alcohol, but not in ether, while the green pigment cannot be dissolved out by any of these menstrua. The blue urine, or these solutions of the blue pigment, give a very characteristic spectrum, namely, a deep defined dark band in red, while the green urine simply obscures both ends of the spectrum.

The addition of a few drops of hydrochloric or nitric acid to the coloured urine, and boiling, causes it to fade to a pinkish red colour, but on standing for thirty minutes or less the colour returns, and it gradually assumes a deep green tint.

There are other reactions, but these suffice to identify the pigments resulting from methylene-blue. In this case the person had taken one dose of about 2 grains inadvertently, and passed blue or green urine during the succeeding forty-eight hours.

NOTE ON AN OPERATION TO CORRECT UNDUE PROMINENCE OF THE EARS.

BY ALEXANDER MACLENNAN, M.B., C.M., L.M. ROTUNDA,

Extra Dispensary Surgeon, Western Infirmary; Extra Honorary Surgeon,
Royal Hospital for Sick Children, Glasgow.

It is seldom that one finds anyone who insists on correction by operation of a minor deformity. The accompanying figures (p. 370) show the same patient before and after operation. The deformity consisted in some excess in the size of the ears, and was much exaggerated by their undue prominence. The plastic operation was done under Schleich's local anæsthesia.

Owing to the sensitiveness of the tissues, and the impracticability of getting the cocaine solution through the cartilage, there was a good deal of pain, especially in stripping the cartilage from the skin in front. Notwithstanding the tediousness of the manipulation, the operation was well borne. For both ears, about 2 grains of cocaine were injected, but, of course, most of it escaped when the skin, &c., was incised. In any case, the patient had no special symptoms of cocaine poisoning, although the dose was apparently so large. An incision was made behind in order to free the ear from its attachments to the mastoid region. A crescentic piece of skin was then removed from the edge, so as to leave a raw surface on the skull for about one-third of an inch. A similar piece was also removed from the ear, including the underlying



BEFORE.

AFTER.

concha and antihelix, but without buttonholing the skin anteriorly. The removal of the cartilage took away much of the elasticity from the ear, and allowed it to be brought in contact with the skull without having much tendency to spring back again. The other ear was treated in a precisely similar way. There was some difficulty in adjusting the skin so as to get both ears alike. The edges of the wound were brought together with four silkworm-gut stitches. Healing took place by first intention. The right ear, besides having a flatter helix, was more prominent to begin with, and it remains so still. Owing to some of the hair on the left side projecting, the difference in the picture appears greater than actually exists. It is also the case that the hair was a little longer at the time the second photograph was taken, but, notwithstanding these circumstances, the change in the

appearance is evident. A shade more could have been removed from the right ear without destroying its form, but there was the danger that, if too much were taken away, the ear might lose its shape and shrivel up a little. The helix was not interfered with at all, for the very reason that an interruption of its continuity might spoil the contour of the ear.

Obituary.

EDWARD M'MILLAN, L.R.C.S. EDIN.

DR. EDWARD M'MILLAN, who died at Bridge of Weir, at the age of 70, on 26th September last, was, up to his retirement from practice two years ago, one of the best known and most widely esteemed of all our professional brethren on the south side of Glasgow. He had earned this position, not by any kind of self-assertion or display, for he was modest and reticent almost to a fault, but by sterling worth and a high professional tone, with a kindly and sympathetic nature, which apparently, without an effort on his part, won the confidence of his patients and of his friends in the profession alike. All of these knew that he was a skilful and trustworthy physician; but as he made no public appearances, and contributed only one or two short papers to the literature of his profession, there are perhaps comparatively few who are now aware that he was a man of much culture and general reading; in fact, that his greatest enjoyment and occupation, apart from his life's work, was in the study of Shakespeare and some of the older dramatists, and very particularly of Thomas Carlyle, of whom he was an ardent admirer, and by whom his attention was first directed to the Cromwellian period of English history, of which he had an extensive and accurate knowledge. This relaxation, if so it may be called, in no way interfered with his more strictly technical reading, which was well up to date, and available when wanted in more than the average degree for a man so busily engaged in routine practice.

Though he never held any hospital appointment, we believe, and never came forward as a teacher or a writer, he interested himself greatly in the Victoria and the Samaritan Hospitals from their foundation, and was a governor of both, being, in

the case of the Victoria Hospital, the first governor elected by the Southern Medical Society under the charter of the hospital. Dr. M'Millan was also a warm supporter of the Southern and other medical societies, and was always, in his own unassuming way, in touch with everything that could promote amity and *bon camaraderie* among the brethren, among whom his influence was always felt, though never obtruded. He had filled in succession all the offices of the Southern Medical Society, including the presidency; and, at the time of his retirement, after forty-three years of active professional work, was its oldest, and certainly its most respected and influential member. An honorary dinner was given to him by the society at the time of his retirement, on 29th March, 1900, when he was presented with an illuminated address in the presence of a large and representative gathering of the profession.

Dr. M'Millan was a native of Glasgow, having been born in Ladywell Street in 1832. He was educated at a small school in the Drygate, and on leaving school became assistant to a chemist and druggist. He entered as a student of medicine at Anderson's College in 1852, but interrupted his course to go as assistant-surgeon on board H.M.S. *Falcon* during the Crimean war, in which he was stationed in the Baltic, and saw no fighting. He took his diploma in 1857, and immediately commenced practice in St. James' Street, at that time on the outskirts of the city. For the last twenty-five years of his professional career he practised in Pollokshields.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

Wallace Wright Adamson (B, P).
 Archibald Aitchison (B, P).
 William Allan (B, Z).
 Thomas M'Call Anderson (B, P).
 John Atkinson (B, P).
 Herbert Bertram (B, P).

Donald Price Bremner (B, C).
 James Nimmo Brown, M.A. (B, P).
 John Cameron (B).
 William Rome Cammock (Z, C).
 George Campbell (B, Z, P, C).
 William Archibald Campbell (B, P).

John Paterson Carmichael (P).
 Matthew Ignation Thornton Cassidy
 (B, P).
 Henry Howard Christie (B, P).
 Alexander Beck Cluckie (B).
 James Coutts (B, Z, P, C).
 Thomas Lawson Craig (B, P).
 Neilson Davie (B, P).
 Alexander Dick (Z, P).
 James Cowie Dick (Z, P).
 John Alexander Doctor (B).
 Robert Donald (P, C).
 James Richan Drever, M.A. (B, C).
 Richard John Driscoll (P).
 James Dunbar (Z).
 Alexander Wylie Eadie (B, P).
 Ernest Milne Eaton (B, P).
 William Miller Fairlie (B, P).
 Thomas Loudon Fleming (P, C).
 George Fletcher (B, P).
 George Muir Fraser (B, P).
 James Wilfred Georgeson (C).
 William Gilfillan (B, Z, P).
 Robert Govan (B, P).
 John Vincent Grant (P).
 Thomas Purdie Grant (B, P).
 Arnold Harris Gray (C).
 James Dow Gray (B, P).
 David Hamilton (B, P).
 William Towers Hardie (B, C).
 James Duncan Hart (B, P).
 James Dunlop Kidd (C).
 James Towers Kirkland (C).
 George Ligertwood (P, C).
 Angus Macaulay (P).
 John M'Cartney (C).
 James M'Donald (B).
 James M'Farlane (B, P).
 Robert M'Inroy (Z, P, C).
 John Henry M'Kay (B, P).
 William Anderson M'Kellar (B, P).
 Murdo Duncan Mackenzie (B, Z, P, C).
 Thomas Cooper Mackenzie (B, P).
 Alistair Argyle Campbell M'Neill
 (B, P).

Charles James Colquhoun Macquarie
 (B, P).
 Isa Carswell Marshall (B, P).
 William Matheson (B, Z, P, C).
 Robert May (B).
 John Clark Middleton (B, P).
 Allan Frederick Miller (B, Z, P).
 John Wilson Miller (B).
 William Miller (C).
 Peter Mitchell, M.A. (C).
 Robert Wright Mitchell (C).
 Hugh Walker Moir (Z).
 Hugh Morton (B).
 Patrick O'Brien (B, P).
 Patrick Joseph O'Hare (C).
 John Oswald (B).
 James Hogg Paul (B, P).
 Frederick Gordon Robertson (B, P).
 James Henry Anderson Robertson (C).
 Murdoch Mann Rodger (Z, P).
 William James Rutherford (B).
 William Wilkie Scott (B, Z).
 John Sharp (B).
 Robert Wilfrid Simpson (C).
 Alexander Hunter Sinclair (B, C).
 William Smellie (B, Z, P, C).
 James Anstruther Smith (B).
 John Steedman (B, P).
 John Stevenson (B, P).
 William Stevenson (Z).
 John Stewart (B, P).
 John Anderson Struthers (B, P).
 David Laurence Anderson Tait (P, C).
 Robert Scott Taylor (B, P).
 Robert Todd (Z).
 Martin Turnbull (Z, C).
 John Morris Walker (B, P).
 Hugh Watson (B, Z).
 John Weir (B, P).
 James Kennedy Welsh (B, P).
 David John Williams (P, C).
 George Haswell Wilson (B, P).
 Samuel Wilson, M.A. (B, P).
 William Mitchell Turner Wilson (Z).
 Moses Youdelevitz (B, Z, P, C).

WOMEN.

Jeannie Montgomery Andrew (B, Z).
 Martha Maclean Buchan (B, Z).

Agnes Picken (B, Z).
 Jeanie Hinshaw Stewart (B, Z).

The following have passed the second professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

- Andrew Blair Aitken (A, P, M).
 William Smith Allan (P).
 Andrew Woodroffe Anderson (P, M).
 Henry Graeme Anderson (M).
 John Bain (P, M).
 Allan Robertson Barrowman (M).
 Robert Daniels Bell, M.A. (M).
 George Thomson Bogle (P).
 Thomas Brodie (P).
 Charles Brown (A).
 Thomas Murdoch Campbell, M.A. (P, M).
 Robert Buchanan Carslaw, M.A. (M).
 Thomas Goodall Copestake (M).
 Charles Milligan Drew, M.A. (P).
 Hugh Harvey Fulton (M).
 William Harold Gillatt (M).
 William Macmillan Gilmour (A).
 David Livingstone Graham (M).
 John Graham (M).
 George Munn Gray (M).
 Louis Leisler Greig (M).
 Saul Hyman Harris (P).
 Alexander Robertson Forrest Hay (M).
 James Waugh Hay (P).
 John Cochrane Henderson (M).
 Ralph Vincent Howell (P).
 Alexander Hunter (P, M).
 Archibald Yuill Hutchison (A, P, M).
 James Rutherford Kerr (A, P).
 John Kerr (A).
 William Jamieson Logie (M).
 Peter Lowe, M.A., B.Sc. (P, M).
 Thomas Symington Macaulay (M).
 John Duncan M'Callum, M.A. (A, P, M).
 Donald Carmichael M'Cormick (M).
 Neil M'Dougall (A, P, M).
 James Boston M'Ewan (M).
 Tom Duncan M'Ewan (M).
 Duncan Macfadyen (M).
 John M'Farlane (M).
 Robert Macfarlane (M).
 James Denniston Macfie (P, M).
 Alexander Stuart Murray Macgregor (A, P, M).
 James M'Houl (M).
 Charles Gordon Mackay (A, P, M).
 David James M'Leish, M.A. (M).
 Matthew Thomson Drummond M'Murich (P, M).
 Andrew Brown M'Pherson (A).
 Richard Cameron Macpherson (P, M).
 James Marshall (P, M).
 William Blair Morton Martin (A, P).
 John Moffatt (P, M).
 John Muir (M).
 Macdonald Munro (M).
 John Murdoch (A, P, M).
 Frank Anderson Murray (A, P).
 George Clement Nielson (M).
 Thomas Orr (A).
 Howard Henderson Patrick (M).
 John Pearson (A, P, M).
 John Clegg Pickup (M).
 Andrew Maclean Pollock (M).
 James Porter (M).
 William Murdoch Rae (P).
 James Watson Richmond (P, M).
 Berkeley Hope Robertson, M.A. (M).
 Robert Thin Craig Robertson (A).
 John Macdonald Ross (A, P).
 William Hermann Sieger (P, M).
 Robert Alexander Slater (P, M).
 George Goldie Smith, B.Sc.
 Morrison Wood Smith (P, M).
 William Robb Taylor (P).
 William Templeton (M).
 James White Thomson (M).
 William Young Turner, M.A. (A, P, M).
 Thomas Macknight Watt (M).
 David Watson Wilson (A, P, M).
 George Wilson (A).

WOMEN.

- Bertha Shanks Alexander (P, M).
 Annie Agnes Baird, M.A. (P).
 Mary Theresa Gallagher (M).
 Jane Hamilton M'Ilroy, M.A., B.Sc. (M).
 Florence Mann (M).
 Margaret Walker Miller (P).
 Harriett Rowland Louise Reid (P).
 Jane Reid Shaw (M).
 Lily Smellie (M).
 Annie May Yates (M).

The following have passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B) in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

John William Arthur (P).
 Thomas Ballantyne (P).
 Andrew Farm Bell (P).
 Thomas Bennett, M.A. (P).
 William Thomas Bolton (P, M).
 Robert George Bradford (P, M).
 John Brown (P, M).
 Carl Hamilton Browning (P, M).
 Robert Bruce (P).
 Daniel Lyall Carmichael (P).
 Alexander Erskine Clark (P).
 John Cross (P, M).
 James Forsyth (P, M).
 James Glover (P, M).
 William Harvey (M).
 John Monnette Huey (P, M).
 Alexander Jamieson (M).
 Alexander Dingwall Kennedy (P).
 Thomas Lovett (P, M).
 Donald Macaulay (M).
 John Finlay Macdonald (P, M).
 Alexander Stewart M'Millan (P, M).

Andrew Alexander M'Whan (P, M).
 John Baird Morton (P, M).
 Andrew Harper Napier (P, M).
 James Carmichael Pairman, M.A. (P, M).
 David Penman (P).
 George Richmond (P, M).
 Peter Hamilton Robertson (M).
 Lawrence Drew Shaw (P, M).
 John Black Stevenson (M).
 William David Henderson Stevenson, M.A. (M).
 John Allan Thom (P, M).
 John Turnbull (M).
 Joseph Walker, M.A. (M).
 Robert Wallace (P, M).
 Robert Watson (M).
 Robert Tait Wells, M.A. (M).
 George Henry Wildish (P, M).
 Hugh Young (P, M).
 John Young (Glasgow) (P, M).
 Watson Young (M).

WOMEN.

Jeanie Auld (P, M).
 Agnes Wallace Cameron (P, M).
 Jessie Galloway Duncan (P).
 Jane Reid Foulds Gilmour (P, M).

Margaret Hardy (P, M).
 Alice Wesley Maclean (P, M).
 Martha Hunter Scott (P, M).
 Janet Gardner Waddell (P, M).

At the recent professional examinations for the degrees of M.B., Ch.B., the following candidates passed with distinction in the subjects indicated:—

First Examination.—In *Botany and Physics*: John Stevenson, Matthew John Stewart. In *Zoology and Physics*: William Gilfillan. In *Physics and Chemistry*: Robert Donald. In *Botany*: Patrick O'Brien, John Steedman, Samuel Wilson, M.A. In *Zoology*: William Rome Cammock. In *Physics*: William Archibald Campbell, Matthew Ignatius Thornton Cassidy, Henry Howard Christie, Neilson Davie, Ernest Milne Eaton, George Fletcher, John Clark Middleton, Frederick Gordon Robertson, Robert Scott Taylor, John Morris Walker, John Weir, James Kennedy Welsh, George Haswell Wilson. In *Chemistry*: William Miller, Peter Mitchell, M.A.

Second Examination.—In *Anatomy, Physiology, and Materia Medica and Therapeutics*: Andrew Blair Aitken. In *Anatomy and Physiology*: William Blair Morton Martin. In *Anatomy*: John Duncan M'Callum, M.A. In *Physiology*: Alexander Stuart Murray Macgregor. In *Materia Medica and Therapeutics*: Allan Robertson Barrowman, Robert Daniels Bell, M.A.; Robert Buchanan Carslaw, M.A.; George Munn Gray.

Third Examination.—In *Pathology and Medical Jurisprudence and Public Health*: James Glover. In *Pathology*: Carl Hamilton Browning, John Baird Morton, Martha Hunter Scott.

GLASGOW UNIVERSITY: POST-GRADUATE INSTRUCTION IN PRACTICAL BACTERIOLOGY AND PATHOLOGICAL HISTOLOGY.—Our readers are reminded of the courses which are now being

conducted in these two subjects. The classes are open to graduates and senior students, and extend over eight weeks, each meeting three times a week. Further information may be had on applying at the Pathological Institute, Western Infirmary.

ROYAL INFIRMARY.—Dr. Hugh M'Laren, Extra Dispensary Physician, has been promoted to be full Dispensary Physician. Dr. Thomas Kay has been appointed an Extra Dispensary Surgeon.

GLASGOW ROYAL ASYLUM, GARTNAVEL: UNVEILING OF MEDALLION PORTRAIT OF DR. YELLOWLEES.—A medallion portrait of Dr. Yellowlees was unveiled at Gartnavel on the afternoon of Thursday, 9th October, by Sir James Marwick. About three hundred ladies and gentlemen witnessed the ceremony. The medallion is fitted in the centre of a slab of white marble in the wall of the large dining-hall of the east house. The portrait is a profile, in bronze, by Mr. Gilbert Bayes, a London sculptor, and is intended to commemorate Dr. Yellowlees' twenty-seven years' work at Gartnavel.

Lord Provost Chisholm presided, and gave an introductory speech. Sir James Marwick then spoke, and concluded by unveiling the medallion on the wall. Dr. Gourlay, on behalf of the directors of the Asylum, accepted the gift. Sir John Sibbald added some remarks. Professor M'Kendrick thereupon presented a replica of the medallion to Mrs. Yellowlees, after which Dr. Yellowlees, in a brief speech characterised by admirable taste and feeling, returned thanks for the kindness shown to himself and Mrs. Yellowlees.

A conversazione with refreshments and music followed the more formal proceedings.

GLASGOW AND WEST OF SCOTLAND BRANCH OF THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.—An important meeting is to be held under the auspices of the local branch on the 6th inst., in the City Hall. Lord Inverclyde will occupy the chair, and addresses will be delivered by Professor Clifford Allbutt from the medical point of view, and by Sir Herbert Maxwell, Bart., M.P., from the standpoint of public health.

THE following are the office-bearers for session 1902-1903 of the various medical societies of Glasgow :—

MEDICO-CHIRURGICAL SOCIETY.

<i>President,</i>	DR. W. G. DUN.
<i>Vice-Presidents,</i>	{ DR. FREELAND FERGUS. DR. CHARLES WORKMAN.

Council.

<i>Section of Medicine.</i>	<i>Section of Pathology.</i>
DR. CARSLAW.	DR. FERGUSON.
DR. HINSHELWOOD.	DR. R. M. BUCHANAN.
DR. ROBERT M'KINLAY.	DR. A. A. GRAY.
DR. DONALD MACKINTOSH.	PROFESSOR MUIR.
<i>Section of Surgery.</i>	<i>Section of Obstetrics.</i>
DR. EDINGTON.	DR. KERR.
DR. J. H. NICOLL.	DR. BALFOUR MARSHALL.
DR. GIBB.	DR. A. N. M'LELLAN.
DR. PETER PATERSON.	DR. M'BRIDE.
<i>Treasurer,</i>	DR. BARCLAY NESS.
<i>Editorial Secretary,</i>	DR. HUGH M'LAREN.
<i>General Secretary,</i>	DR. W. K. HUNTER.

PATHOLOGICAL AND CLINICAL SOCIETY.

<i>President,</i>	MR. A. ERNEST MAYLARD.
<i>Vice-President,</i>	PROFESSOR ROBERT MUIR.
<i>Hon. Treasurer,</i>	DR. HENRY RUTHERFURD.
<i>Hon. Editorial Secretary,</i>	DR. JOHN H. TEACHER.
<i>Hon. Secretary,</i>	DR. A. R. FERGUSON.

Members of Committee.

DR. T. K. MONRO.	DR. J. LINDSAY STEVEN.
DR. GEO. H. EDINGTON.	DR. JOHN M. COWAN.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

<i>Hon. President,</i>	DR. H. J. KELLY, Baltimore.
<i>President,</i>	DR. J. NIGEL STARK.
<i>Vice-Presidents,</i>	{ DR. J. M. MUNRO KERR. DR. J. K. KELLY.
<i>Treasurer,</i>	DR. JOHN LINDSAY.
<i>Secretary,</i>	DR. A. W. RUSSELL.
<i>Editor of "Transactions,"</i>	DR. G. BALFOUR MARSHALL.
<i>Reporting Secretary,</i>	DR. A. MACLENNAN.
<i>Pathologist,</i>	DR. JOHN H. TEACHER.

Members of Council.

DR. J. C. HERRERTSON.	DR. D. M'GILVRAY.
DR. CARSTAIRS C. DOUGLAS.	DR. JANE B. HENDERSON.
DR. SAMUEL ALEXANDER.	DR. G. N. TURNER.

SOUTHERN MEDICAL SOCIETY.

<i>Hon. President,</i>	.	.	.	.	.	DR. JAMES FINLAYSON.
<i>President,</i>	.	.	.	.	.	DR. D. M'GILVRAY.
<i>Vice-Presidents,</i>	.	.	.	.	.	(DR. THOMAS RICHMOND.
						DR. J. FRASER ORR.
<i>Treasurer,</i>	.	.	.	.	.	DR. THOMAS FORREST.
<i>Secretary,</i>	.	.	.	.	.	DR. ANDREW WAUCHOPE.
<i>Editorial Secretary,</i>	DR. MATTHEW DUNNING.

Members of Council.

DR. JAS. HAMILTON.		DR. WEIR.		DR. CARROLL.
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*Court Medical.*DR. JOHN STEWART (*Convener*).

DR. WATSON.		DR. PARRY.
DR. ALEX. MILLER.		DR. LEASK.

Representative to Victoria Infirmary.

DR. CHARLES E. ROBERTSON.

EASTERN MEDICAL SOCIETY.

<i>President,</i>	.	.	.	.	.	DR. ROBERT M'C. SERVICE.
<i>Vice-President,</i>	.	.	.	.	.	DR. CHARLES R. M'LEAN.
<i>Secretary,</i>	.	.	.	.	.	DR. P. S. BUCHANAN.
<i>Treasurer,</i>	.	.	.	.	.	DR. J. WILSON MATHIE.
<i>Reporting Secretary,</i>	.	.	.	.	.	DR. HUGH H. BORLAND.
<i>Seal Keeper,</i>	.	.	.	.	.	DR. JAMES BATTERSBY.

Council.

DR. JOSEPH A. CLARK.	|	DR. JOHN P. GRANGER.
DR. WM. PATRICK.	|	DR. THOS. RUSSELL.
DR. JOHN T. MACLACHLAN.	|	DR. ROBERT WILSON.

Auditors.

DR. MALCOLM BLACK and DR. DAVID YOUNG.

MEETINGS OF SOCIETIES.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING I.—8TH OCTOBER, 1902.

The President, DR. ROBERT SERVICE, in the Chair.

PRESIDENTIAL ADDRESS: "A CRITICISM OF THE MEDICAL ACTS
—A PLEA FOR REFORM."

BY DR. ROBERT SERVICE.

The President, in his address, stated that the more recent laws regarding school, parish, town and county councils are based on popular election, and within their own jurisdiction these bodies are supreme. But if these councils go outside their own sphere the ordinary law courts may interfere, and if they are not able to keep them in order, the supreme executive or Parliament can step in. These bodies are returned by popular election to carry out most important work, and are responsible to the electors on the one hand, and the executive on the other. In the light of this general question of the progress of popular government, consider the government of the medical profession—the one being, in fact, the key to the other.

Fourteen Acts of Parliament, dating from 1858 to 1886, have been passed to govern and regulate the medical profession. Ten of these Acts relate mainly to the internal regulations of the various licensing bodies and the General Medical Council. Dr. Service pointed out that one of the four remaining Acts, passed in 1876, bears hardly on women graduates. *E.g.*, a woman takes the M.A. degree, say in Glasgow; her name is put on the Council register, and she takes her place as a member of the General Council of the University. Her sister takes the M.B. degree, and by an Act passed at the instigation of a body outside the University is denied the privileges accorded to her sister. She is not permitted to sit as a member of the General Council, or to have a voice or vote in the internal administration of her *Alma Mater*.

The Act of 1858 begins by saying that it is expedient to distinguish qualified from unqualified practitioners, and the 40th section of this Act gives the Council power to deal with the unqualified practitioners. Yet these people are more numerous and flourishing than ever. These men trade openly on the fears and passions of men and women, and yet the Council has in this matter shown a powerlessness or indifference difficult to characterise. The Act of 1858 defines the constitution of the General Medical Council, and the Act of 1886 amends it. In the constitution formulated in 1858, the general practitioners had no direct representation; but by the Act of 1886 three representatives were given to England, one to Scotland, and one to Ireland, and the Crown resigned one of its nominees. There is a further provision in the Act giving the Council authority to increase the number of direct representatives, but though this has been repeatedly asked, the Council has seen fit to refuse this very moderate request on the part of those who find the money necessary to carry on its work. The General Medical Council, as presently constituted, is composed of thirty-one members—five nominated by the Crown, five returned by the general practitioners of the United Kingdom, and twenty-one returned by the licensing bodies. It will thus be seen that those who are the main support of and have the greatest interest in this body are hopelessly outnumbered.

Though the general practitioner practically pays everything, he has only the shadow of authority. From the financial standpoint the constitution of the Council is as unsound as it is antiquated. The registration fee being fixed, and the average annual number of entrants to the profession being fairly well established by this time, the Council should have a fair idea of its income, and spend accordingly. Instead of this, however, the Council has gone merrily on spending recklessly out of all proportion to its income, and had it been a private trading company it would have required to have gone into liquidation.

The General Medical Council is composed and has always been composed of men of outstanding ability; yet it has been singularly lacking, as a Council, in initiative with regard to medical education. Passing on to consider the penal powers of the Council, the 29th section of the Act of 1858 is the notorious "infamous conduct" section. It practically puts the Council above the law of the land, and it can make what it pleases infamous conduct, and strike a practitioner off the register accordingly. If the Council should find a practi-

tioner guilty of infamous conduct, it can only follow one of two courses—either warn, or strike off the register. In seafaring life, an officer for dereliction of duty may have his certificate suspended for three, six, or twelve months, or taken away altogether, but not so in medicine; it is either complete ruin or liberty. To hold this practically irresponsible and autocratic body in check, the only controlling powers are popular opinion and the Privy Council. In any future amendment of the Medical Acts, this section should be so amended as to control and strictly limit the penal powers of the Council.

Discussing the Dentists' Act, the President pointed out that dentists are under control of the General Medical Council. Section xiii gives discretionary penal powers to the Council commensurate with the nature of the offence—a provision not found in the Acts dealing with medical practitioners. After stating that money received on registration is to be applied in the execution of the Act, it goes on: "And subject thereto towards the support of museums, libraries, or lectureships, or public purposes connected with the profession of dentistry or dental surgery, or towards the promotion of learning and education in connection with dentistry or dental surgery. Though this Act has been in force for twenty-five years, the libraries, museums, and lectureships are not yet in sight. To make matters worse, the dentists have no representative on the Council.

The reforms advocated by Dr. Service were in brief—

1. Let the practitioners of England, Ireland, and Scotland return members to the Council in proportion to the number of practitioners resident in each country. If in addition to this it should be considered wise to give the licensing bodies in each of the areas named a representative, let them combine to return one member.

2. Let the election be through the licensing bodies, by all those who hold a qualification from any special school voting through that school. If any one should hold qualifications from more than one school, let him select the school through which he will vote.

The Crown representation should be very much reduced, and it should pay a proportion of its expenses. One thing should be altered, and that is the present method of returning members from the various licensing bodies. The member of Council representing the University of Glasgow is returned by the Senate, a body which is only a section of the University, and similar methods prevail in the other licensing bodies,

the representative being elected by a part, and yet returned as representing the whole.

All the other questions of finance, penal powers, and education depend on a radical reformation of this antiquated body. The question of reform, meantime, lies in the hands of the registered medical practitioners.

Dr. Couper moved a vote of thanks to the President for his address, and this was seconded by *Dr. Patrick*.

REVIEWS.

Human Embryology and Morphology. By ARTHUR KEITH, M.D. Aberd., F.R.C.S. Eng. London: Edwin Arnold. 1902.

DR. KEITH is to be congratulated on the success that has attended his effort to bring within the scope of a single volume all the facts of practical importance in these vast subjects, and we cordially recommend the work as one likely to prove of great benefit to students and practitioners of medicine alike. For, to the one class, amid the stress of professional examinations, as to the other in the turmoil of busy practice, an intimate knowledge of the main facts of development and comparative anatomy is equally important, and in the past this knowledge has had to be gleaned from separate, and more or less ponderous, volumes.

In this manual a very complete account of the development of each system and organ is given from both points of view, while, at the same time—and in this the volume is unique—particular care is bestowed on such facts as are of special importance in elucidating the various classes of human abnormalities.

The descriptions are necessarily short, but they are well arranged, and paragraphed in such a way as to make it a book of easy reference. In the matter of arrangement we fail to appreciate the purpose served by deferring consideration of the development of the ovum and blastoderm until Chapter VII is reached, while the earlier chapters are devoted to processes much more advanced, and requiring for their comprehension a clear knowledge of the former. For the same reason we think it unfortunate that the short, but excellent,

chapter on "The Segmentation of the Body" (Chapter XII) does not likewise meet the student on the threshold of the work.

Dr. Keith makes plentiful, and often very effective, use of analogies in his descriptions, and many of his pages afford welcome relief from the stereotyped phraseology of text-books. We must, however, take exception to the septum of the auricle "*falling like the blade of a guillotine on the endocardial cushions with which it fuses*" (p. 240), as a simile rather too forcible, though correct; while this, that "the blastoderm grows out from the umbilicus to form the embryo in much the same way as a soap bubble is blown from a pipe" (p. 282), is, to say the least, misleading.

Considerable attention is given to questions of theory as well as of fact, and these are, in the main, carefully handled and skilfully abbreviated; yet we cannot accept that "the muscles supplied by the facial nerve are peculiar in that they are the physical basis into which many mental states are reflected, and *in which they are realised*" (p. 39); nor are we aware of any classification in which can be grouped together "all the diseases to which epiblastic structures are subject," as is suggested in the description of the origin and fate of the Wolffian duct (p. 105).

The numerous line-diagrams in illustration of the text are specially praiseworthy; we have merely to state that they number 252 (and many of them represent various stages in a series of drawings), in a volume of 315 pages, to show the important part these have played in the compilation of the book. Simple in line, and never overburdened with descriptive lettering, as is too often a fault, they illustrate every important point described in the text so effectively that, in the revision of the figures alone, the various processes of development are readily recalled. The numerous references to the figures in the text are all correctly given, and we notice only one mistake in the descriptions of the figures themselves, the words "mesial" and "lateral" being exchanged in Fig. 18 showing the roots of the olfactory nerve.

A Manual of Surgery for Students and Practitioners. By WILLIAM ROSE and ALBERT CARLESS. Fifth Edition. London: Baillière, Tindall & Cox. 1902.

THE fifth edition of this *Manual* lies before us, and we find it to be well-suited for those for whom it is intended. It is

copiously illustrated, and the text, while not prolix, presents an exceedingly good, and almost exhaustive, statement of present-day surgery. We would draw the authors' attention to two small slips in the list of plates—for Plate V the condition is described as "scirrhus mammæ," while, now that peace is an accomplished fact, the description of Plate III is somewhat out of date.

We are not surprised that this edition has followed so closely on the heels of its predecessor; it continues to justify the position which the work has already attained to—"Rose and Carless" being a household word with Glasgow students.

Studies in Heterogenesis. By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. Part I. With 210 Illustrations from Photomicrographs. London: Williams & Norgate. 1902.

THIS latest work by Dr. Bastian maintains the same simple and lucid style as that in which he expressed, in 1872, his views on the origin of life in his work called *The Beginnings of Life*. In regard to that work he now says, "I have never written a single line during the twenty-nine years that have intervened, though my faith in the correctness of my own observations has never wavered." During that time, however, he has failed to gain converts to his beliefs. The fault, indeed, does not lie in his style of composition, but in the untenable beliefs he is possessed of. The accepted ideas on this subject are even further removed from those of his than they were at the earlier period referred to. His doctrines on this subject are now simply ignored. Consistently maintaining a belief instead of proving a logical mind may rather exhibit persistent folly, and betray an incurable mental temperament. In *The Beginnings of Life* he interprets the decomposition of the body after death in the following words:—"An animal whose vital powers being lowered by disease, and death overtakes it, then in all parts of the dead organism there is a bursting forth of new life, and ever varying forms of mould and mildew appear and flourish on the previously living aggregate." In his present studies he says—"I believe the lower forms of life, both animal and vegetal, are springing up anew in countless myriads from matrices wholly unlike themselves." It is amazing that a teacher of Dr. Bastian's status should complacently expect that such ideas might be gaining ground in an age that is determined for the present to

maintain its beliefs in the possibilities and certainties of preserved meats and aseptic surgery.

The experiments in which Dr. Bastian imagines that he demonstrates spontaneous generation, or heterogenesis as he prefers to call it, will be deemed conclusive by very few, if any, but himself.

In *The Beginnings of Life* his deductions were drawn from more or less crude observations on decoctions of cheese and infusions of hay, turnip, &c., and now in these "Studies" his method of experimenting is, if anything, more primitive. As example of such:—Two specimens of mud containing an abundance of vegetal cells and other organisms were placed in a tall glass jar, like those used by confectioners, and having added ordinary tap water, the cover was put on, and the jar placed outside a window with a southerly aspect, to benefit from the London October sunlight. The organisms at the end of a certain time were different from those observed in the vessel at the commencement. Dr. Bastian considers there was no genetic relationship between the latter and the former; one form he failed to identify with any known species. "Nothing like it," he says, "is to be found represented in Hassal's or Cook's work on the fresh water algæ, and Dr. Cook himself could not refer it to its species with certainty." This is what he calls in *The Beginnings of Life* an ephemeromorph. We can only compare this phenomenon to the well-known snowflake on the river.

Another specimen, consisting of small conferva growing with vaucheria, was taken from a ditch, washed in a fine spray to get rid of the mud, placed in a shallow dish fully exposed to the sunlight; the confervæ died, and amœbæ rose out of it. Again, he derived ciliates from hydatina eggs "from a ditch near Kingsbury into which there was a small amount of drainage from a farmyard."

In his experiments there is no attempt to establish pure cultures, or cultivating the specimens through several generations, or check experiments of any kind whatever made. But Dr. Bastian thinks that while his doctrine of heterogenesis is an important item in biological science, it has this other significance, that it renders explicable many difficulties that attend the acceptance of the general theory of evolution. He recognises the difficulty that the evolutionist has in explaining the beginning of life on earth, subsequent to its cooling. With rigorous candour he says—"By heterogenesis I have shown a few days may take the place of an enormous period of time previously postulated for the evolution even of such

organisms as ciliated infusoria." It must be admitted here that the discrepancy that exists among scientific minds as to the nature of the beginnings of life is a serious consideration. The logical difficulty that Dr. Bastian and those who believe in the possibility of life coming into being *de novo*, either recently or at a remote time, may be brought home to them by demanding of them a theoretical or practical demonstration of it intelligible to everyone. But they have made no such demonstration of the synthesis of life, and they do not seem to be on their way towards the demonstration. Indeed, certain considerations, partly theoretical, partly experimental, seem to preclude the possibility of, at any time recently or remotely, the *de novo* explanation of life; but that it is much more likely that the assumed antagonism of the state of the earth at one time to the existence of life is wrong, than that life should have had a beginning. Dr. Bastian may rest assured, however, that his notion that the lower forms of life are constantly coming into being *de novo* is not only gaining no credence, but is attracting no attention.

Since the above was written, Part II has appeared. The only section which needs further comment is Appendix II, being "a 'note' whose publication was refused by the Royal Society and some foreign Academies of Science," while it may be said that their treatment could not be called courteous. Instead of posing as a martyr, as he does, on account of the attitude of these bodies, Dr. Bastian ought to console himself with the reflection that, as a teacher, he has ample opportunity of imparting his views to his students.

Diseases and Injuries of the Teeth, including Pathology and Treatment. By MORTON SMALE, M.R.C.S., L.S.A., L.D.S., and J. F. COLYER, L.R.C.P., M.R.C.S., L.D.S. Second Edition. Revised and Enlarged by J. F. COLYER. London: Longmans, Green & Co. 1901.

COMPARED with the last edition of this text-book, many of the subjects have had more ample treatment, and a considerable amount of new matter has been introduced, bringing it well up to date. It may be specially noticed that certain additional subjects have received specific treatment which in previous works on dental surgery had been neglected, or had only had slender attention. It is also characteristic of the work that almost every subject is fully and equably considered. In this

respect it fulfils its purpose as a dental student's text-book in a most satisfactory manner. The chapter on "Bacteriology of the Mouth," by Kenneth Goudby, is a useful and well-written addition to the book; but, while admittedly bacteria are intimately connected with dental decay, it cannot be said that our knowledge in this respect has led to much success in treatment as yet in a preventative sense. The small section on the "Cause of Great Prevalence of Caries," treats the subject as it ought to have been done long ago—as a definitive problem—which, indeed, it is, and one of the greatest importance. Up till now, this subject has been confused with other essential aspects of caries. It would be difficult to name a disease the phenomena of which are so well known that endeavours at prevention have been so ineffectual; and, in so far as the little attention that has already been paid to the cause of the great prevalence of caries, no unanimity of opinion has been arrived at. It is frequently vaguely attributed to civilisation, but such a statement is merely a cover for ignorance, and is, as a matter of observation, contrary to fact, for caries is prevalent among many uncivilised races, so-called; and also, luckily, there are some individuals among the civilised who have sound dentitions. The nature of food—sometimes its chemical composition, sometimes its physical qualities—has been pointed to as having something to do with the prevalence of caries. Sometimes the water of a district and a variety of other specific causes have been blamed, but inconclusively. The enquiry seems to have been taken up from a mistaken point of view, as this disease, like so many others due to microbic action, seems really to be caused by hygienic neglect, if it is permissible to typify the cause in such general terms. A careful consideration of all the circumstances involved seems to point to the following data, viz.:—That caries is a disease of childhood; the tooth most affected is the first of the permanent series to appear. This tooth erupts about the sixth year, and, immediately after eruption, so far as is at present known, becomes the seat of disease in at least 50 per cent of the whole of any population; those exempt from caries are never more than 25 per cent. Caries is thus a disease practically universal, and remarkably evenly distributed in all grades of society; yet, although it never kills (no one being said to die of caries), it is possible that if caries of the teeth could be prevented, or nearly completely prevented, that probably the death-rate would thereby be reduced to a greater extent than it would be by the prevention or successful treatment of any other disease, not

excepting tubercle itself. With regard to the special operations described in this text-book, the description is in such detail that it becomes a practical guide to the student, although it is obvious that dental operations, being highly manipulative, are most easily learned by demonstration and practice. Perhaps the least satisfactory section is that on irregularities, the classification of which is far from satisfactory. Irregularities are treated in two groups—(1) Those not the result of crowding, and (2) those the result of crowding. Such an arrangement might afford mental exercise for a metaphysician, but is ill-adapted for the enlightenment of the dental student. The weak point in the composition of this book is its classification and division into sections. If a text-book is to be divided up, the classification should speak for itself, but a promiscuous use of the letters of the alphabet, with ordinal and numeral subsections, hampers the composer and mars the literary effect.

Outlines of Practical Physiology. By PROFESSOR STIRLING.
Fourth Edition. London: Charles Griffin & Co. 1902.

THOSE who have used previous editions of *Outlines of Practical Physiology* will be glad that Professor Stirling overcame his "reluctance" to offering a fourth edition of the work. The new volume contains half as many pages again as the third edition, and, we estimate, about double the matter. The vast amount which is contained in its 624 pages is disguised by the frequent use of small type, which, however, does not make the book unpleasant to read.

Intended primarily to help his own students in the work of laboratory courses of chemical and experimental physiology, it is in fact far more than a student's text-book, viz., as it is described on the title-page, "A Manual for the Physiological Laboratory, including chemical and experimental physiology with reference to practical medicine." For the purpose, indeed, of teaching a student's practical class we would prefer to use one or other of the smaller works which are referred to in a general way in the preface. For, the student, even though guided by a teacher who selects the experiments and reactions by the practice of which he is to be educated, is apt to be bewildered and discouraged by the mere numbers of them which are presented to him in Professor Stirling's work. On the other hand, for the demonstrator of physiology or pathology, for the clinician who desires to take advantage

of laboratory methods applied to medicine and surgery, and for the student who wishes to go more deeply into his subject than the ordinary practical course takes him, the book is a most valuable one. It would be hard to name a reaction or a process of physiological chemistry of any importance which is not described sufficiently fully for practical purposes. Moreover, in the case of the more recent ones, and those which might require to be known in more detail than has been set forth in this work, the reference to the original paper is given. The experimental part is equally good. Considered simply as a well-arranged collection of experiments, it bespeaks remarkable industry and enterprise on the part of its author.

Part I, Chemical Physiology, commences with the general properties and reactions of proteids, carbohydrates, fats, &c., and then proceeds to consider the chemistry of the various organs, fluids, secretions, and excretions of the body, both normal and, less deeply perhaps, but still in a very useful way, pathological.

Part II, Experimental Physiology, includes descriptions of electrical apparatus applied to physiology, methods of investigating muscle and nerve, chemotaxis and galvanotaxis, the heart and circulation, the lungs, absorption and excretion and cryoscopy, the examination of the nervous system and sense organs, and the testing and recording apparatus appropriate to them.

The work concludes with an appendix on works of reference useful in the laboratory, journals and periodicals, tables of chemical reagents, certain special instruments, a table of the doses of drugs required to produce their physiological effects, lists of instrument-makers who supply physiological apparatus, and a good index.

We have found it accurate and reliable. Altogether it is a work of reference which deserves to find a place in every laboratory dedicated to biological and medical science.

A Manual of Ophthalmoscopy for Students and General Practitioners. By J. E. JENNINGS, M.D. London: Rebinan, Limited. 1902.

THIS *Manual* gives in short compass a rapid sketch of ophthalmoscopy in a way useful to practitioners and students.

In his preface the author states it is an elaboration of a series of lectures on ophthalmoscopy. It does not in any way

pretend to be a complete or exhaustive treatise, and will, no doubt, be found of considerable service to those who want to refresh their previous knowledge. To get the full advantage of such a course, the constant study and handling of cases is necessary, as no illustrations, however good—and some are somewhat crude—can take the place of clinical work. The author states that sarcoma of the choroid causing detachment is to be distinguished from simple detachment, among other signs, by the fact of it causing increased tension. This sign is by no means conclusive, as the effect, if any, on the tension depends, at anyrate in its earlier stages, on the position of the tumour.

The differential diagnosis between glioma and pseudo-glioma is somewhat vague. However, it is, perhaps, hardly fair to criticise too closely a manual of this size, as when writing in brief one has often to be somewhat dogmatic. It will well repay the time spent in its perusal.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D., F.R.C.P. Third Edition. London: Charles Griffin & Co., Limited. 1902.

THAT three editions of this work have been called for in less than a decade is to a certain extent the best testimony to its value. The present edition amply sustains the reputation of the work, and the author has spared no pains to bring the subject matter thoroughly up to date in every respect. The volume is a standard one in the English language, and as a work of reference is on a level with Taylor's *magnum opus*. At the same time the book has defects which it might be advisable to remedy in future editions. Perhaps the chief defect is the practical absence of illustrations. The subject of forensic medicine is one which is peculiarly adapted for illustrative methods, the quoting of selected cases being of small value compared with definite presentment of the facts. In another direction there has been too much of the "policy of continuity" in the compilation of the work, and we have yet to wait for an author who will fling aside the old traditions of the subject and give to the profession a twentieth century book on forensic medicine. The arrangement of the chapters shows a distinct want of method; for example, Chapter IX, dealing with blood-stains, is sandwiched between chapters

dealing with the identity of the living and the identity of the dead. On page 24 no mention is made of cholesterin as a constituent of meconium, although it is a more characteristic component than some of those which are indicated in the text. On page 67 no notice has been taken of the possible obliteration of tattoo marks by means of over-tattooing with a white pigment. The statement on page 122 that a hydatid mole can only occur as the result of impregnation may, in the light of recent cases quoted, be open to question. The author, on page 146, lends his support to Ungar's hypothesis that the air in the lungs of a newly-born child may be absorbed by the blood circulating through the lungs after the cessation of respiration; this, to say the least, is highly improbable, and the theory of Thomas explains the phenomenon in a more rational manner. The medical practitioner placed in the difficult position indicated on page 331 will find little to guide him in the advice there given. The proper chemical name and formula for white arsenic are given in this edition of the work. On page 440, line 10, "1½ ounces" should be "one ounce and half an ounce." The section on toxicology is excellent as a whole; but in view of the ever-increasing number of substances classed as poisons some discretion is necessary in the selection of the more important for detailed treatment in a work of this kind. It would be a distinct improvement in future editions if the illustrative cases quoted were all printed in smaller type. As a work of reference the book is invaluable, but for students it is too cumbersome and deals too much with the consideration of different theories.

Transactions of the Twenty-second Annual Meeting of the American Laryngological Association. New York: Carey Printing Co. 1901.

THE papers of most general interest in this volume are those dealing with cancer of the larynx.

Dr. J. N. Mackenzie advances "a plea for early naked-eye diagnosis, and removal of the entire organ, with the neighbouring area of possible lymphatic infection, in cancer of the larynx." He holds that every resource and refinement of clinical diagnosis should be resorted to before an appeal is made to the microscope. If the laryngoscopic examination fails to define the nature or limits of the disease, thyrotomy is

justifiable. Before adopting this procedure, especially if a portion of the growth is to be removed for examination, it should be understood that the surgeon is at liberty if the disease prove cancerous to act as he considers best.

Dr. Mackenzie condemns the method presently in vogue of removing a piece of the growth through the natural passages for microscopic examination before proceeding to operate. He treats in a similar manner the endolaryngeal method lately recommended. In short, he holds that there is only one rational method, in the majority of cases at least, of dealing with cancer in the larynx, viz., early total extirpation of the entire organ with its tributary lymphatics and glands whether the latter are apparently diseased or not.

Bryson Delavan gives statistics of the operations that have been performed for the relief of malignant disease of the larynx; and Solis Cohen deals with the surgical treatment of the disease.

French advocates the upright position in ether operations upon the nose, throat, and ear, claiming that in this way there is less blood lost, less chance of ear complications, and that the operation can be performed with greater ease, thoroughness, and accuracy by retention of the usual position of surgeon and patient.

A number of other papers of value to the laryngologist are contained in this volume *e.g.*, hæmorrhage after operation on the nose and throat, by Bliss; secondary hæmorrhage following the use of suprarenal extract, by Hopkins; dermoid cyst of the nose, by Birkett; correction of deviations of the nasal septum, by Roe, &c.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By JOHN PATRICK, M.A., M.B. AND ARCH. YOUNG, B.Sc., M.B.

A Contribution to Amputation Surgery.—Wilms (*Centralblatt für Chirurgie*, 5th July, 1902) points out that since Bier introduced his method of making an osteoplastic covering for the anterior surface of the bone in amputations, the question of stump formation and treatment has been more widely considered. He makes a small contribution to the various methods of forming the best stump in amputations in the lower third of the leg, by

suggesting that the tibial surface might be covered by the Achilles tendon. His idea is that the tendon forms an elastic cushion between the bone and the skin, and prevents damage to the skin by pressure against the hard, bony surface. He performed the operation in a case where the bones were sawn through about a handbreadth above the malleoli, by stitching the tendon, drawn over the face of the stump, to the anterior surface of the tibia. In the fourth week, the patient had a completely painless and exceedingly useful stump.—J. P.

The Treatment of Prolapsus Ani in Children by Paraffin Injections.—Karewski, of Berlin (*Centralblatt für Chirurgie*, 12th July, 1902), describes this method of treating obstinate cases of prolapse which have resisted all other means. It has been tried for six months in the Policlinic of the Jewish Hospital with considerable success. Hard paraffin, melting point 56° to 58° C., is used. For two days the patients are freely purged, and, on the afternoon before the injection, one or two grammes of bismuth subnitrate are administered to quiet the bowels. The prolapse is replaced, and, with a guiding finger in the rectum above the anus, a ring of paraffin is injected between the external skin and the mucous membrane, one puncture only being used. The administration of bismuth is continued, and a suitable diet given, so that defæcation may not occur during the next twenty-four hours.

Out of eight cases, from 2 to 8 years of age, so treated, only one was unsuccessful, owing to imperfect preparation and unsuitable after-treatment; the other continued well, from two to six months after. Two cases required two injections; one case, three injections; for the remainder, one sufficed. Infection of the puncture wound need not, with care of the bowels, occur.—J. P.

On the Localisation of Foreign Bodies by Puncture. G. Perthes, of Leipzig (*Centralblatt für Chirurgie*, 9th August, 1902).—It is well known that the evidence of the presence of a foreign body afforded by the Röntgen rays has not been followed by such speedy and certain removal as was expected. A more exact localisation of the foreign body is necessary. When the part is exposed to the fluorescent screen, a needle is inserted so as to touch the foreign body; the needle remains in position, and acts as a guide for the more certain extraction of the body. Perthes recommends the needle to be held by forceps with wooden blades, since, if held by the finger or a metal instrument, too many shadows are visible on the screen. The location of the foreign body should be thoroughly studied on the screen, and the needle inserted so as to reach its objective by the shortest route compatible with anatomical considerations. After insertion also, the part should be looked at from all angles, to make certain that the needle has not missed the foreign body. A local anæsthetic may or may not be used. This plan has been adopted for some months by the author in all cases of small foreign bodies in the hand and fore-arm, and the amount of time spent in these operations has been reduced to a minimum.—J. P.

The Prostatic Capsule, True and False, in Relation to Hypertrophy of the Gland.—From an interesting paper by Albarran and Motz (de la Clinique de M. le Professeur Guyon à l'Hôpital Necker), contributed to the July issue of the *Annales des Maladies des Organes Génito-Urinaires*, the following points of interest with regard to the relations of "true" and "false" capsule, are culled.

"When the prostate is enlarged, the capsule covers, just as in the normal state, the anterior, posterior, and lateral aspects of the gland; the base and apex of the prostate have no capsule.

"Behind, the capsule, compressed by the increased bulk of the gland, appears rather thicker than in the normal state, especially near the apex of the prostate.

"At this level it can always be well made out, and, by incising it in the median line, can be easily separated, in nearly every case, from the glandular

tissue by means of a fine instrument; when the capsule is well separated below, it is seen that the apex of the prostate forms a curve with concavity in front, embracing the urethra, which is very plainly distinguished.

"In the upper part of the posterior aspect of the prostate the capsule becomes thinner, and, when one separates it off down close to the seminal vesicles, it shells off easily.

"The lateral and anterior portions of the capsule can, in most cases, be easily separated from the gland with the finger.

"In certain cases, however, the capsule adheres to the prostate more or less extensively, and separation at the adherent parts is impossible; that is markedly seen when the hypertrophy is accompanied by prostatitis.

"In analysing the first 30 perineal prostatectomies carried out by one of us (the authors, Albarran and Motz), Dr. Petit de Niort notes 3 cases of intimate adhesion of the capsule, and 7 of adhesion preventing systematic sub-capsular enucleation. *Also, it is possible in certain cases, underneath the true capsule, to create artificially a false prostatic capsule.*

"This 'false capsule,' which is apt to deceive the inexperienced operator, is formed much as follows:—When practically the whole prostate is made up of adenomatous nodules, the glandular tissue interposed between the several new-formed lobules is found compressed and flattened, showing here and there atrophied or dilated *cysts-de-sac*.

"The peripheral part of the gland is found compressed externally, and flattened between the new-formed nodules and the capsule (true)—(an arrangement well shown in diagram by the authors).

"If, in such a case, the capsule (true) is very deeply incised, one will cut, at the same time, the atrophied glandular tissue (peripheral), and will be able to make a very easy line of separation underneath it" (a separation, however, of what is merely a central adenomatous mass, from the atrophied and compressed glandular tissue externally, which will be left behind), "but one which will, perforce, amount to but an incomplete operation; believing that *only* prostatic capsule (true) is left, the operator will, in reality, leave a more or less considerable portion of the actual gland substance of the prostate."—A. Y.

Contribution to the Diagnosis and Treatment of Wandering Kidney.—Von Batsch, in the *Münchener Med. Wochenschr.*, 1902, No. 25, mentions two cases which are of interest in this connection. They illustrate (1) the difficulties liable to arise in diagnosis where adhesions or connections have been established between a wandering kidney and other organs, and (2) the importance of fixation of the kidney, even if it is impracticable to attempt to restore it actually to its proper anatomical position.

CASE I was that of a young, previously healthy woman, who, on lifting a heavy weight, felt suddenly a severe pain in the right loin, for some days passed dark-coloured urine, and then, after a rigor, became jaundiced. A tumour, about the size of a hen's egg, with ill-defined limits, but which felt as if continuous with the liver in the gall-bladder region, was regarded as a solid tumour of the gall-bladder. Operation demonstrated the mistake, for the right kidney was found fast united with the gall-bladder, hepatic and common bile-duct, the latter moreover somewhat restricted, which obviously had given rise to the colic. After separation of the adhesions, the kidney was carried back, and fixed at a higher level.

CASE II concerned an attachment of the right kidney with loops of small intestine, which formed such a network of firm adhesions that a separation without injury to bowel wall was impossible; it was necessary, therefore, to leave the kidney capsule in the adhesion area. Fixation of the kidney in the usual way had the desired result. It is noted that it is specially in right-sided wandering kidney that gall-bladder and ducts are liable to be implicated and to lead to complications, which may give rise to errors, for if even simple pressure of a wandering kidney on the gall-duct may originate icterus and colic, so much the more likely to occur will these be in actual adhesions or coalescence of these viscera.—A. Y.

DISEASES OF THE EAR.

By WALKER DOWNIE, M.B., F.F.P.S.G.

The Venous System of the Temporal Bone and its Relation to the Complications of Mastoid Disease. By Dr. Oppenheimer. —The importance of the venous system of the temporal bone is at once realised when it is borne in mind that the aggregate area of the veins is much greater than that of the arteries of this bone, and that the veins anastomose one with another so as to produce a complete network throughout the external and internal surfaces and cells of this region. The intimate connection of the sinuses, meninges, and cranial fossæ readily explains the liability to infection following mastoid necrosis. In many cases of sinus thrombosis and brain abscess complicating middle ear suppuration, the infective material is carried directly to the parts by means of the venous channels, large and small.

Excluding the sinuses, the venous channels present three distinct systems in relation to the mastoid area. The first of these is formed by the anastomosis between the veins of the cerebral membranes with those of the pia mater, cerebrum and cerebellum, the diploic channels and the internal maxillary vein. The second system is that of diploic veins, and is an essential factor in some of the sinus cases complicating mastoid inflammations. In these veins the blood flows slowly, and their dilatations act as most excellent sites for the development of focal infections.

The third group consists of those veins which, ramifying through the temporal bone, are in indirect communication with the diploë of the occipital region. Others of this group are in direct communication with the large venous sinuses and cranial cavity; and the tympanum and pneumatic cells are brought into direct vascular connection with the cranial contents by the small blood-channels which ramify freely through the mastoid and petrous portions of the bone.

Another factor in the production of sinus complications is the natural feebleness of the rate of blood-flow, and the tendency to localised blood stagnation resulting from the differences of calibre of the vein as it pursues its tortuous course here. In addition, there is an absence of any definite system of valves in the intracranial veins and sinuses, and this same condition is not uncommon in the veins of the tympanum and mastoid.—(*New York Medical Record*, 23rd August, 1902.)

Aural Bougies.—Dr. George L. Richards showed, before the eighth meeting of the American Laryngological, Rhinological, and Otolological Society, aural bougies, which he recommended for the relief of earache and of otitis externa. They are a modification of those introduced by Grüber, and contain one-sixteenth minim of carbolic acid, one-seventh minim of fluid extract of opium, one-quarter grain of cocain, one-fourteenth grain of atropine sulph., with enough water, gelatine, and glycerine to make a proper mass which will readily dissolve at the temperature of the body. The bougies are of the size of a quill, and half an inch long. They are dipped in warm water before being inserted.

Dr. Max. A. Goldstein, at the same meeting, reported five cases of what he believed to be primary tuberculosis of the middle ear.

Dr. Henry I. Hartz read a paper on the Pathology and Diagnosis of Otitis Media Insidiosa, otherwise Sclerosis.

In this, he says the hyperplasia begins within the bone, and involves specially the articulation of the stapes and the oval window. The process consists not only of a hyperplasia, but also a hyperostosis and metaplasia, and might localise itself in any of the structures of the labyrinth and in the chain

of ossicles. When confined to the labyrinth, the integrity of the acoustic nerve might be affected in a purely mechanical way, and induce Ménière's group of symptoms. In this sclerotic process, the cartilage disappeared, becoming converted into osseous tissue; and, when the tip of the cochlea is involved, the patency of the Eustachian tube is threatened. In most cases, the membrane of the middle ear is found to be thickened, as a result of hyperæmia. Rheumatism, gout, syphilis, scrofula, and diseases of the nasopharynx, such as adenoids and enlarged turbinates, are looked upon as predisposing causes. The duration of the process has been known to vary from three to thirty years. The diagnosis was made by the exclusion of all other forms of progressive deafness, and by the functional test.

Statistics showed that about 10 per cent of all diseases of the ear were examples of a true sclerosis, or the result of spongiöse formations. There is usually a high degree of deafness in both ears, and the process begins usually between the age of 20 and 30 years. Women are more often affected than men, and 17 per cent originate during the puerperium.

DISEASES OF CHILDREN.

By R. BARCLAY NESS, M.A., M.B., C.M.

Paraplegia in an Infant, Three Months of Age.—Such a case was shown at the Philadelphia Pediatric Society on 13th May, 1902, by Dr. Alexander H. Davison, and reported in the *Archives of Pediatrics* for September, 1902, p. 700.

The child was born in a breech presentation; and considerable traction had to be made upon the legs, in order to effect delivery. The child presented a flaccid paralysis of the lower limbs; the abdomen was flaccid, and sank at each side; and there were no contractions of the abdominal muscles. At regular intervals, corresponding to the respiration, there was a striking sinking-in of the chest muscles on the sides, at about the region of the diaphragm. The bowels could be moved only by enema. The distended bladder could be palpated; and pressure caused a flow of urine—an incontinence of retention. The knee-jerks, the plantar reflex, and the abdominal skin reflexes were all absent. Anæsthesia extended to the xiphoid anteriorly, and above the second dorsal vertebra posteriorly. The pupils reacted freely to light. There was no cranial nerve palsy, and examination had shown no spinal bone lesions. The feet were warm, and there was no atrophy of the legs or thighs. The diagnosis was thought to be a transverse myelitis between the second and third dorsal segments. The breech presentation and delivery by the feet was considered to have been connected with the production of the condition.

In the discussion that followed, Dr. J. P. Crozer Griffith, who had previously seen the child, referred to the case as being a most remarkable one, and pointed out that paralysis of the upper extremities, due to injury at birth, was not uncommon; but that of the lower appeared to be rare. He was struck by the curious sinking-in of the costal margin, together with the entirely passive state of the abdomen during respiration, and the active movement of the upper part of the chest. It gave the impression, at first, that the diaphragm was paralysed; but this was certainly not the case, because the lesion in the cord was clearly too low to have involved this muscle, which is innervated from the fourth cervical segment. The condition was probably due to the lack of tonicity of the abdominal walls, on account of which there was a failure of proper support to the upper portion of the trunk.

In connection with the absence of knee-jerks, he quoted Walton, of Boston, who has referred to the fact that in complete destruction of a portion of the cord,

as in cases of fracture of the spine, the reflexes may be entirely lost, instead of increased, as generally occurs in injury or inflammation—such, for instance, as is so generally exemplified in Pott's disease and the like. In cases of paraplegia of the new-born, it appeared that the cause was most often hæmorrhage into the spinal canal.

He regarded the prognosis in the case exhibited as very bad. It was hardly possible that the child could live long. Any intercurrent disease, especially of the respiratory tract, would be likely to prove fatal.

Diagnosis of Meningitis by Lumbar Puncture.—In the same number of the *Archives of Pediatrics* (September, 1902, p. 704), there is the report of a paper read by Dr. Hand at the Philadelphia Pediatric Society on 13th May, 1902.

He referred to the difficulty often met with in the diagnosis of meningitis, not only when meningeal symptoms occur in the course of infectious diseases, but also when they are part of an illness obscure in nature. When the clinical existence of meningitis is clear, a second difficulty arises with regard to the variety, upon which the prognosis largely depends. Inflammation of the meninges always alters the character of the cerebro-spinal fluid, the resulting changes being diminution or absence of sugar, increase of albumen, and—except in simple serous meningitis—the presence of leucocytes, bacteria, and frequently endothelial cells. The variety of leucocytes present has often been referred to as of great diagnostic value by some observers, an excess of lymphocytes indicating a tuberculous process, while polynuclear leucocytes are in the majority in other forms. Some have been unable to determine this. The writer's own experience is that in some fields of a given slide a differential count is often difficult or impossible, owing to evident distortion of the cells during the process of mounting; but that where the handling has been very careful and the nuclei are distinct, a differential count is of value. It does not, however, have the positive value that the finding of specific germs does; and positive conclusions can be drawn only from positive results. In thirty specimens of cerebro-spinal fluid examined, twenty-one contained tubercle bacilli. The other cases comprised 1 of cerebro-spinal fever followed by recovery, 2 cases of pneumococcic meningitis, 1 of serous meningitis, 1 of normal fluid, and 1 of suspected brain-tumour, the 3 remaining being meningitis of undetermined origin—probably septic, the clinical course not indicating tuberculosis. The estimation of sugar has some value, as a small amount had been found in the serous meningitis and in those cases of tuberculous meningitis tested with phenylhydrazin, the other cases of meningitis not responding to that test. Fehling's solution does not seem delicate enough for the amount of fluid at the disposal of the examiner. Differential counts in the tuberculous cases showed all of them to have an excess of lymphocytes; while the other cases, except the serous, the normal, and the brain-tumour cases, gave an excess of polynuclears, the exceptions having no cellular elements. The percentages of lymphocytes in the tuberculous cases ranged from a minimum of 65 per cent to a maximum of 99·4 per cent, without any marked features in the course to explain this range.

The technic of the examination is of the highest importance, that used by the writer being the following:—The fluid should be collected in a sterile test-tube plugged with cotton, and allowed to stand until a strand of fibrin has formed; this usually forms in from two to six hours, and settles in the bottom. A straight platinum needle—not a loop—is touched to one edge of the fibrin, which is then transferred to a slide, care being taken to tip the test-tube so that the fibrin constantly floats in fluid. The excess of fluid is then drained off from the slide, and the remainder evaporated by gentle heat; it being not only unnecessary, but usually fatal to the success of the examination, to press the fibrin between two slides. The film is fixed by heat, stained in the usual manner, and then carefully gone over with a mechanical stage. Since adopting this method, the writer believes he has been successful in 100 per cent of the tuberculous cases.

Diabetes Mellitus in a Child Four Years Old.—Heinrich Stern, of New York, reports such a case in the *Archives of Pediatrics* (June, 1902, p. 425). The patient, a girl, had never been a strong child. When 2 years of age, she had diphtheria without evidently producing lasting after-effects. When 4 years and 3 months old, on account of her baby sister having diphtheria, she was given a prophylactic dose of antitoxin. Previous to the administration of the injection, she was not well—she was weak, languid, and tended to sleep. Within a few hours after the injection she became jaundiced, and remained so for some weeks. It was near the end of this period that diabetes was diagnosed. The lassitude increased, and she would sleep for most of the twenty-four hours. Appetite and thirst became insatiable. Emaciation was progressive, and she became so weak that she needed assistance if she wanted to turn in bed. The twenty-four hours' urine, on the average, amounted to almost 4 litres.

The urine showed the following characteristics:—Amount excreted in the past twenty-four hours, 3,250 c.c.; colour, greenish-grey; transparency impaired; reaction, 0.48; acidity; specific gravity, 1030.5 at 15.5° C.; total solids, 230.96 grams; salts of hydrochloric acid increased; salts of sulphuric and phosphoric acids greatly augmented; ammonia increased; carbamid, 3.1 per cent = 100.75 grams; uric acid normal; xanthin bodies and creatinin about normal; indican traces; mucin normal; serum albumen and other proteid substances absent; fatty matters absent; glucose, 2.8 per cent = 91 grams; glycuronic and alkaptonic acids absent; acetone and diacetic acid present in considerable amounts. Microscopically, no abnormal substances could be distinguished.

The faeces (examined at some later date) contained—Fatty acid crystals; cholesterolin and koprosterin; mucin; glucose in small amount (detected by Fehling's and Nylander's tests, confirmed by fermentation). As there was no absolute regulation of the diet, no examination for nitrogen was made.

The blood examination showed—Specific gravity, 1039; alkalescence (of 100 c.c. blood) = 373.1 milligram NaHO; hæmoglobin, 42 per cent; number of erythrocytes, 2,800,000 in 1 c.mm.; of leucocytes, 12,000 in 1 c.mm.; proportion of leucocytes to erythrocytes, 1 to 233; morphologically, the blood contained no abnormalities.

The condition of the various organs was normal, unless in the case of heart, which was irregular in action; the liver, which was slightly enlarged and tender (left lobe); and the lymphatic glands, which were enlarged in the inguinal regions.

Great improvement and increase of weight took place under treatment by dieting, antipyrin, codeine, and sodium pyrophosphate.

Diabetes in children is rare at such an age. When it does occur in children at all, it sets in usually suddenly and after an acute febrile disease, such as measles, influenza, scarlet fever, enteric fever, meningitis, or gastro-enteritis.

The author admits that the cause in this case is doubtful, but leans to the view that, inasmuch as a pancreatic affection often stands at the foundation of diabetes mellitus, that we are justified in assuming a diphtheritic or other infection of this organ. The non-occurrence of pyrexia need not necessarily preclude this supposition. While the absence of fatty stools is no positive proof of the non-involvement of the pancreas, the presence of goodly amounts of fatty material in this case, as that of cholesterolin and koprosterin for instance, lends colour to a pancreatic substratum of the disease.

A Case of Exophthalmic Goitre in a Boy Four and a Half Years of Age.—An abstract of the report of a case by Variot (*Gaz. des Mal. Inf.*, vol. iv, No. 3) is given in the *Archives of Pediatrics*, June, 1902, p. 471.

The child had always been delicate, though his family history was good. An attack of pertussis, complicated by double broncho-pneumonia, left him thin and feeble, and it was noticed that his eyes bulged. The exophthalmos became very marked, and the pupils were equally dilated; Graefe's sign was

absent. The thyroid body was decidedly enlarged, the right lobe more so than the left. There was a marked vascular thrill on both sides of the neck, and a continuous murmur was heard over the great vessels. The pulse varied from 152 to 168 per minute; even during sleep it never fell below 140. The heart was enlarged, and a musical mesosystolic murmur was heard, probably of extra-cardiac origin. Nothing in the lungs explained the paroxysms of cough, which were probably laryngeal in origin. Both liver and spleen were enlarged; attacks of diarrhoea alternated with constipation, but the appetite remained good. Anæmia became very marked. Vaso-motor disturbances were present, the skin becoming suddenly red (scarlatiniform) with the slightest emotion. It was impressionable and easily agitated, but not hysterical; tremors were not present.

Thyroid and tonic treatment brought about marked improvement in two months, especially in the cardiac symptoms. Salicylate of soda, as recommended by Baginsky in adult cases, gave negative results. The case is the youngest which has been reported.

Books, Pamphlets, &c., Received.

- Carmina Medici, by William Findlay, M.D. Paisley: Alexander Gardener. 1902.
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- The Work of the Digestive Glands: Lectures by Professor J. P. Pawlow. Translated into English by W. H. Thompson, M.D., M.Ch., F.R.C.S. Eng. Illustrated. London: Charles Griffin & Co., Limited. 1902. (6s. net.)
- A Manual of Medicine, Edited by W. H. Allchin, M.D. Lond. Vol. IV: Diseases of the Respiratory and of the Circulatory Systems. London: Macmillan & Co., Limited. 1902. (7s. 6d. net.)
- Obstinate Hiccough: The Physiology, Pathology, and Treatment, based on a Collection of over One Hundred and Fifty Cases from British and Foreign Works, by L. F. B. Knuthsen, M.D. Edin. London: J. & A. Churchill. 1902. (6s.)
- Bacteriology. Catechism Series. Edinburgh: E. & S. Livingstone.
- Cancer of the Uterus: A Clinical Monograph on its Diagnosis and Treatment, by Arthur H. N. Lewers, M.D. Lond., F.R.C.P. Lond. With 51 Original Illustrations and 3 Coloured Plates. London: H. K. Lewis. 1902. (10s. 6d. net.)
- A Handbook of Surface Anatomy and Landmarks, by Bertram C. A. Windle, F.R.S., Sc.D., M.D., M.A. Dublin. Third Edition. London: H. K. Lewis. 1902. (4s. net.)
- The Mattison Method in Morphinism: A Modern and Humane Treatment of the Morphin Disease, by J. B. Mattison, M.D. New York: E. B. Treat & Co. 1902. (1 dol.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 25TH OCTOBER, 1902.**

	WEEK ENDING				
	Sept. 27.	Oct. 4.	Oct. 11.	Oct. 18.	Oct. 25.
Mean temperature, . . .	54·3°	52·6°	47·6°	49·5°	48·5°
Mean range of temperature between day and night, . .	14·5°	11·7°	17·3°	15·2°	14·2°
Number of days on which rain fell,	5	0	1	5	5
Amount of rainfall, . . ins.	0·51	0·0	0·02	0·83	0·26
Deaths registered,	245	276	261	288	284
Death-rates,	16·4	18·5	17·5	19·3	19·0
Zymotic death-rates, . . .	1·8	1·9	1·9	1·9	1·3
Pulmonary death-rates, . .	4·7	5·2	5·1	6·3	6·6
DEATHS—					
Under 1 year,	61	69	74	85	82
60 years and upwards, . .	44	49	44	59	55
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	...	1	3	...	...
Scarlet fever,	2	2	1	4	3
Diphtheria,	1	1	3	5	3
Whooping-cough,	2	5	7	5	5
Fever,	3	3	2	2	...
Diarrhoea,	19	16	12	13	8
Croup and laryngitis, . .	1	...	1	2	3
Bronchitis, pneumonia, and pleurisy,	42	54	59	75	72
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Diphtheria and membranous croup,	12	11	18	25	15
Erysipelas,	16	25	22	35	24
Scarlet fever,	40	66	54	53	55
Typhus fever, . . . . .	...	...	...	2	3
Enteric fever,	10	18	16	9	7
Continued fever, . . . .	...	...	1	...	...
Puerperal fever, . . . .	...	3	5	...	1
Measles,*	20	31	23	28	21

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

No. VI. DECEMBER, 1902.

ORIGINAL ARTICLES.

NOTES ON A FEW CASES OF LUPUS TREATED IN THE
ELECTRICAL DEPARTMENT OF THE WESTERN
INFIRMARY.¹

By DONALD J. MACKINTOSH, M.B.,
Medical Superintendent.

THE treatment of lupus by light, as instituted by Dr. Finsen, of Copenhagen, was begun in the Western Infirmary early in December, 1901, on the presentation to the hospital of an installation by the Exhibitors' Club of the Glasgow International Exhibition. The installation consisted of lamps of the London Hospital pattern, and additions have since been made of a Bartholomew lamp, a Tesla's high-frequency apparatus, &c.

At the commencement of the light treatment, a test exposure of ten minutes to a current of 10 amperes is given, and if the reaction be not too violent, the sitting is increased to fifteen or twenty minutes, and the current to 12 amperes, care being

¹ At the March meeting of the Glasgow Medico-Chirurgical Society, held in the Western Infirmary, I showed a number of cases of lupus which were at that time under treatment in the Electrical Department. It was at first intended that short clinical histories of a few of the cases should be incorporated in the report of the meeting, but, in response to a request by the Editor, I have extended the notes and added a few photographs.

taken by the nurse in charge that the part to be treated is kept closely applied to the lamp to ensure its being rendered as anæmic as possible. In a small number of cases, such violent inflammatory reaction, with vesication, has occurred, that the time of exposure has been reduced to five minutes, and in certain cases, the treatment has been discontinued for some days to allow the skin to recover from the blistering. In other cases, no satisfactory reaction has appeared until the



CASE I.—J. K.

patient has been under treatment for some days, or even weeks, and, roughly speaking, it is possible to foresee the ultimate result from the degree of reaction—the greater the reaction to the test exposure, the greater the hope of ultimate cure. The time of exposure and strength of the current used are always regulated by the patient's idiosyncrasy, while, at the same time, our endeavour is to subject the patient to the maximum exposure of twenty minutes to a current of 12

amperes. The reaction in most instances follows immediately on the exposure, but the patient is not conscious of any unusual sensation until some hours afterwards, when he experiences, if the reaction has been good, heat and tingling in the part treated; while, at the same time, the local redness seen immediately after the exposure is intensified. In no case has the patient complained of actual pain in the part.

In the treatment of lupus, both the London Hospital pattern



CASE I.—J. K.

of lamp and the Bartholomew lamp are used, the Bartholomew lamp being, from the ease with which it can be manipulated, especially suited to the treatment of lupus on the trunk and extremities. After long-continued treatment with either lamp, the tissues appear to lose to some extent their power of ready reaction, and we have found that a change from the London Hospital lamp to the Bartholomew lamp and *vice versa* is, under these conditions, followed by a

renewal of the activity of reaction. The place of the high-frequency current in the treatment of lupus is not yet thoroughly established, and, while many have found that superficial patches of lupus, where there are no deep focal points, are greatly benefited by its application, we have not employed it alone in any case of lupus of the skin. When, however, the affected area has become skin-whole after treatment by the light, we employ the high-frequency



CASE II.—B. S.

current in the treatment of the scar. Even after the surface is completely healed, the scar is dense, thick, and inelastic, and our experience during the past ten months goes to show that if such a scar be left untreated, a speedy relapse is to be expected. After treatment, however, for some weeks by the high-frequency current, the scar becomes white, thin, and elastic, so that, in the majority of cases, it is scarcely noticeable, and, during the short time which we have had for

observation, has not shown any tendency to a recrudescence of the disease. In cases, too, where lupus has attacked regions inaccessible to the lamps, as, for example, the mucous membranes of the nose and mouth, we have employed the high-frequency current by the introduction of glass electrodes into the nostrils and mouth, and have thus been able to treat the part by direct application, with marked benefit to the patient and without pain.



CASE II.—B. S.

Since the inauguration of the Electrical Department, sixty-five patients have been treated for lupus. In all save one, marked improvement has resulted, while ten have been dismissed cured after a course of treatment varying from three months to six months. In the one case in which no improvement took place, the disease was of long standing, leading to extensive necrosis of the nose, and particularly of the alæ and septum. The effect of the light on the ulcerated

edge of the alæ was to cause the granulations to become excessively fungoid, while the ulcerative process seemed to be hastened rather than retarded. In other two cases where the edges of the nostrils were attacked by lupus, a similar fungation of the granulations was observed, and treatment by the light was discontinued. In these two cases, the ulcerated edge was afterwards treated by the high-frequency



CASE III.—M. W.

current with resulting cure. It is difficult to see why such fungation of the granulations should occur in this situation, unless it be that the part cannot be rendered sufficiently anæmic by pressure to allow of the penetration of the violet and ultra-violet rays, which consequently act simply as a superficial irritant.

As descriptions of the apparatus used in the treatment of lupus have already appeared in most of the medical journals, I have simply mentioned the various instruments used in each case.

I take this opportunity of acknowledging my indebtedness to Dr. J. Campbell McClure for rendering me much valuable assistance in the work, also to the sister and nurses of the Electrical Department for their constant attention in carrying out the treatment.

Photographs of certain of the cases, with short clinical histories attached, are appended.



CASE III.—M. W.

CASE I.—J. K. had suffered from lupus of the face for seven years. The disease first began on the left side of the nose, and extended rapidly over the cheek. Since the appearance of the disease various forms of treatment had been resorted to, including cauterisation and general constitutional treatment, without apparent benefit. The part, however, was never scraped.

The light treatment was first begun on 7th December, 1901. The London Hospital lamp was used, with a current of

10 amperes, and the time of exposure ten minutes. Six weeks later the current was increased to 12 amperes, and the time of exposure to fifteen minutes. The reaction to the light was always good, sometimes violent, and it was found necessary to discontinue the treatment for a few days from time to time. In one of these intervals treatment with a glass electrode, excited by the Tesla coil, was adopted, with marked benefit to the patient, and until four weeks of her dismissal the Finsen



CASE IV.—F. S.

light and Tesla coil were used alternately. The patient was dismissed healed on 26th June, 1902, the Tesla coil alone having been employed during the last four weeks of treatment.

CASE II.—B. S., æt. 28, had been the subject of lupus for some twelve years. The disease first attacked the throat, and two years later extended into the upper part of the nares. It

spread gradually down the nasal mucous membrane, and made its appearance externally four years ago.

The previous treatment in this case consisted of external applications and, for a short time, exposure to the x-rays. The parts were never scraped.

When the patient presented herself for treatment at the Western Infirmary, the nose externally was much swollen and reddened, but there was no ulceration of the skin surface, save



CASE IV.—F. S.

only at the anterior edges of the nostrils. Examination of the nasal mucous membrane, however, showed it to be actively ulcerated, particularly where each ala met the skin septum, while the cartilaginous septum was almost entirely absent.

The light treatment of the external surface of the nose was begun on 5th December, 1901. The London Hospital lamp was used with a current of 10 amperes, and the time of exposure was ten minutes. On 24th January the current was

increased to 12 amperes, and the exposure to fifteen minutes. The reaction was at first very sluggish, and was not satisfactory until the amperage was increased. On 10th March, treatment of the nasal mucous membrane by electrical currents of high frequency was begun. A specially made glass electrode was introduced into the nostril, the time of treatment being five minutes at a sitting. This form of treatment was continued till 14th May, when she was dismissed cured. The light



CASE V.—Mrs. B.

treatment had been stopped on 25th March, as by that time all redness and swelling had disappeared from the nose. On dismissal, the ulceration of the nasal mucous membrane was found to have healed completely, and thickening of the nares had almost entirely disappeared.

As a means to correct the great deformity of the nose resulting from cicatricial contraction which existed when the patient first came under observation, small vulcanite tubes

were introduced into the nostrils, and worn constantly, except during treatment, with considerable benefit.

CASE III.—M. W., æt. 23, had suffered from lupus of the bridge and left side of the nose for six years. The disease began on the left side of the nose near the inner canthus of the eye, and spread slowly across the bridge of the nose and downwards towards the cheek. Scraping and cauterisation were



CASE V.—Mrs. B.

resorted to on two occasions, but without any improvement resulting. In connection with the onset of her attack of lupus of the face, it is to be noted that two years previously she suffered from a suppurative lachrymal condition in the left eye, which was for many months under treatment. The canaliculus is seen to be slit. In addition, still a year earlier, patient had an abscess in the neighbourhood of the knee, which, after being opened, did not heal for some six months. About the

time of the appearance of the lupus on the face, patient noticed that her voice was becoming husky, and in October, 1901, it was discovered that she was the subject of lupus of the larynx.

Treatment by the London Hospital lamp was begun on December, 1901, the current used being of 10 amperes, and the time of exposure ten minutes. On 17th January, 1902, the current was increased to 12 amperes, and the time of



CASE VI.—Mrs. C.

exposure to fifteen minutes. The reaction was almost invariably good. On 5th March, treatment by the high-frequency current, applied by means of a glass electrode, was instituted, and until 1st April was alternated with the lamp. During the remainder of the time she was under treatment the lamp alone was employed. While the patient made rapid progress during the first two months of treatment, the progress latterly was very slow, but she was ultimately dismissed completely cured on 6th June, 1902.

CASE IV.—F. S. had suffered from lupus of the nose for seven years. The disease began at the edge of the right nostril, and about a month after its first appearance she was treated by the application of ointments. As the disease tended to spread, she consulted a surgeon four months later, who scraped the part. After scraping it healed completely, and remained healed for a year. At the end of that time the disease again made its appearance in the same locality, and



CASE VI.—Mrs. C.

the part was once more scraped and cauterised, with the result that it again healed for a short time. It soon broke down again, however, but the patient did not immediately consult a surgeon. It was not until some eighteen months before admission to the Western Infirmary that she again saw a surgeon, when the disease had involved both alæ and septum. The part was at this time scraped and cauterised, and treatment by caustics was continued regularly every two or three

weeks for upwards of a year. Patient was admitted to the Western Infirmary some ten days before electrical treatment was commenced, and on 11th and 12th December, 1901, she was injected with tuberculin, when a marked local reaction with slight rise in temperature followed the injection of $\frac{1}{2}$ c.c. of tuberculin in a 1 in 1,000 dilution.

Treatment by the London Hospital lamp was begun on 17th December, 1901, with an exposure of ten minutes to a



CASE VII.—S. S.

current of 10 amperes. On 28th December the patient was seized with an acute inflammatory condition of the face, with severe febrile disturbance, which lasted for a week, at the end of which the lupus was markedly improved. The light treatment was discontinued during this attack, but was resumed on 15th January, 1902, and on 27th January the current was increased to 12 amperes and the time of exposure

to fifteen minutes. Between 5th March and 1st April the light was alternated with the electrical discharge from the Tesla coil. Since 1st April the light alone has been used. The patient is still under treatment (16th October), but the condition is markedly improved.

CASE V.—Mrs. B., æt. 45, had suffered from lupus of the nose and upper lip for upwards of a year.



CASE VII.—S. S.

The disease began on the right side of the nose, and spread rapidly, involving the skin-septum and upper lip. The condition was at first untreated, but about two months before treatment was begun at the Western Infirmary she went to another institution, where she was treated by exposure to the *x*-rays. Patient states that there was no appreciable improvement in her condition under this form of treatment,

which was continued until within a few days of her coming to the Western Infirmary.

Light treatment was begun on 6th February, 1902, with an exposure of fifteen minutes to a current of 12 amperes. This was continued daily without intermission until 16th April, when she was dismissed cured. Treatment by the London Hospital lamp alone was employed in this case.

CASE VI.—Mrs. C., æt. 55, had been the subject of lupoid disease of the skin of the left hand for upwards of two years. The disease made its appearance first of all on the back and sides of the little finger, and gradually spread over the back of the hand and wrist. The hand was at times painful. She



CASE VIII.—C. B.

had been under treatment since the first appearance of the disease by ointments and general constitutional treatment. The parts were never scraped or cauterised.

The light treatment was commenced on 11th December, the London Hospital lamp being used, with an exposure of ten minutes to a current of 10 amperes. On 16th January the current was increased to 12 amperes, and the time of exposure to fifteen minutes. On 13th August treatment by the Bartholomew lamp was begun, and has been continued up to the present date. The patches of diseased skin were taken in turn, beginning at their margins, and working towards the centre as the margins healed. The high-frequency current has not been used in this case. The reaction obtained was

always good, though never violent. The parts are now completely healed, save for a small area on the thumb.

CASE VII.—S. S., æt. 7. About eighteen months prior to his beginning treatment in the electrical department, patient received a kick on the face, which caused an abrasion on the left side of the nose. A scab formed, which he scratched, and an eruption appeared round the seat of the injury. Under treatment at home this improved, and partially healed, but broke out on the nose shortly afterwards. Three months later it spread to the cheek. On 18th September, 1901, patient was admitted to the Western Infirmary, and the ulcerated patches were treated by the application of the acid



CASE VIII.—C. B.

nitrate of mercury until 12th October, when a rubber bandage was applied to the face, and worn until the light treatment was begun. Tuberculin was not used.

Treatment by the London Hospital lamp was begun on 11th February, 1902, with an exposure of ten minutes to a current of 10 amperes. Treatment was continued until 1st May, when patient was sent home for a time. The reaction was always good, and occasionally severe, necessitating reduction in time of exposure to five minutes.

Patient returned on 30th May quite well, save for a small point on the nose, which reacted slightly after an exposure of ten minutes to a current of 10 amperes. As patient's general condition was not very good, he was sent away, to return in the autumn.

In August patient was brought to the Infirmary manifestly ill, and was removed to the Fever Hospital suffering from enteric fever.

CASE VIII.—C. B., æt. 17, had been the subject of a lupoid condition on the fore-arm of seven years' duration.

Seven years ago patient had an abscess on the lower third of the fore-arm, which was opened, and healed completely. Shortly afterwards a crust appeared on the scar, which reappeared after removal. This has since spread round the margin of the scar in spite of treatment by ointments and attention to general health. The part was never scraped or cauterised.

Treatment by the London Hospital lamp was begun on 4th June, 1902, with an exposure of ten minutes to a current of 10 amperes. As the reaction was very slight, the current was increased four days later to 12 amperes, after which the reaction was satisfactory. The treatment has been carried on without intermission until the present date, and marked improvement has resulted, as may be seen in the photograph.

DIMNESS OF VISION IN DISEASES OF THE KIDNEY CHARACTERISED BY ALBUMINURIA.¹

By A. MAITLAND RAMSAY, M.D.,

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THE patient whose case provides the text for this lecture came to me at the Glasgow Ophthalmic Institution on 24th May, 1902, complaining of dimness of vision. He was 25 years of age; somewhat pale, but well nourished; and apart from the impairment of sight, which had first shown itself in the previous March and become steadily more marked, felt perfectly well. In early childhood he had suffered from measles and whooping-cough; but, according to his own account, he had never had scarlet fever, although he had been, at the age of 10, laid up with what was at the time termed

¹ A post-graduate lecture, delivered in the Glasgow Ophthalmic Institution on 4th November, 1902.

"kidney fever and dropsy." From this illness, severe as it must have been, for it lasted practically for nearly two years, his recovery seemed complete, and he had gone to work shortly after, and had been in regular employment ever since.

On being questioned, he admitted that he had now and again felt slight pain in the back, had at times lost a considerable amount of blood from his nose and gums, and had latterly been passing an increased amount of urine, because he had found it necessary to get up during the night to empty his bladder. There was, however, no œdema of ankles or eyelids, nor had he suffered from headache, giddiness, nausea, or vomiting. The pulse was full and regular, though slightly increased in tension; the heart, lungs, and larger blood-vessels were healthy; there was 70 per cent of hæmoglobin, and the red corpuscles, although somewhat below the standard in number, were of normal size and shape. The urine was pale in colour, passed in large quantity—112 oz. on an average every twenty-four hours—had a specific gravity of 1010, and contained a large quantity of albumen. Blood and sugar were both absent, and on microscopic examination only a few hyaline tube-casts were seen, while the amount of urea excreted was almost up to the usual standard, and no precipitate was deposited after standing.

The right eye had been injured when the patient was 7 years of age, but, though there was an adhesion of the iris to the cornea, the accident had in no way interfered with sight. When the eyes were tested, the visual acuity of each was found to be less than one-tenth, and ophthalmoscopic examination showed that in both alike the optic disc was swollen and blurred, and that, though the arteries were of normal size, the veins were large, congested, and tortuous. Scattered over the fundus were numerous flame-shaped hæmorrhages, with here and there a white patch of roundish shape and soft outline.

The noteworthy feature of the case, and the one to which I wish specially to direct your attention, is that the dimness of sight which caused medical advice to be sought was the only subjective indication of the existence of serious kidney disease. Though the fact that both eyes were affected pointed to some constitutional cause underlying the ocular trouble, the patient was quite clear that he did not in any way feel even out of sorts, and the urine was not tested, nor the albuminuria discovered, till the ophthalmoscope had revealed the retinal lesions.

The clinical association of defective sight with disease of the

kidneys did not escape the observation of the older physicians. Bright, in his *Records of Medical Cases*, in some of which ocular symptoms were among the earliest as well as the most striking features, makes special mention of it, and after the invention of the ophthalmoscope, knowledge of the subject became more and more exact. In 1859 Liebreich published a detailed description, illustrated by drawings, of the ocular changes in Bright's disease. Albuminuric retinitis, he said, presented, on ophthalmoscopic examination, features so characteristic that, whenever they were recognised, Bright's disease could at once be diagnosed with absolute certainty. When this was written the ophthalmoscope was a comparative novelty in medical practice, so it can well be imagined with what enthusiasm Liebreich's assertion was received, and what high expectations were formed of the value of this new instrument of precision in clinical work. To be able to see in the fundus pathological changes which enabled the practitioner to diagnose "with absolute certainty" disease in an organ so far distant as the kidney opened up no end of possibilities, and men's hopes rose high at the thought that at last a direct and easy road had been discovered to the sure solution of many difficult problems presented in clinical medicine.

Liebreich's statements had, however, to stand the test of further observation; and more extended experience has shown that, although what he said was in the main true, yet there are many exceptions. The man who would nowadays commit himself to a positive diagnosis of Bright's disease on the evidence afforded by the eye symptoms alone would, indeed, be rash, for a similar form of neuro-retinitis is occasionally found in anæmia, and also in tumour of the brain.

The graphic ophthalmoscopic picture of albuminuric retinitis first published by Liebreich is, however, still looked on as a piece of classic clinical description. There is the reddish optic disc, swollen, blurred in outline, and surrounded by a diffuse opacity of the retina, spotted here and there with red patches due to hæmorrhage. Radiating from the macula in the form of a star are numerous small, white, shining dots; and scattered over the fundus are larger white patches, the result either of the partial absorption of a blood-clot or of fatty degeneration. The arteries are generally attenuated and accompanied by white lines, and the veins are distended and tortuous.

This is the type; but there are many variations. There may be associated with Bright's disease very strongly-marked visual defects unattended by any gross lesions in the fundus oculi, and cases of dimness of sight connected with diseases of

the kidney characterised by albuminuria may, therefore, be divided into two classes:—

1. Uræmic amaurosis, where the ophthalmoscope reveals no gross lesions in the retina.

2. Retinitis albuminurica, where marked retinal changes are present.

Uræmic amaurosis occurs most frequently in those cases of Bright's disease in which cerebral symptoms predominate. It may exist alone, but is more frequently accompanied by headache and vomiting, and an attack is often preceded by a convulsive seizure. Without discussing the various explanations which have been put forward to account for uræmia, it may be said that it is due to blood-poisoning brought about by waste products that ought to have been eliminated from the system by the urine. The resulting blindness is usually bilateral and complete, and though, as a rule, it passes entirely off after some hours, yet, in exceptional cases, it may last for days.

The following account of a patient whom I had frequent opportunities of examining, while she was under Dr. Tennent's care in the Western Infirmary, affords a very good illustration of uræmic blindness. The case is fully recorded in the *Transactions of the Pathological and Clinical Society* for 1889.

The patient was a woman, aged 28, a domestic servant, who was admitted to Ward IX on 15th June, 1888, and remained in hospital until her death on 7th January, 1889. Although she said she had always enjoyed excellent health until March, 1888, she had not been a fortnight in hospital before she showed most of the well known symptoms of renal cirrhosis. "She suffered from severe headaches, frontal and vertical, extreme anorexia, nausea and persistent vomiting, drowsiness, noises in the head, sudden attacks of breathlessness accompanied by a feeling of choking, and frequent spasmodic movements of the muscles of the face, arms, and legs. Cerebral disorder was still more clearly indicated by the development of active delirium, attended by great emotional disturbance, the patient giving way alternately to fits of laughing and crying. The latter became so continuous and intense that it was at one time thought desirable to have her removed from the hospital." Associated with these general symptoms there was profound disturbance of vision. The attacks of blindness came on suddenly, and though they were at first of very brief duration, they gradually became longer and longer, till on one occasion

the patient remained more or less blind for ten days. The eyes were examined by means of the ophthalmoscope over and over again, but up to this time on no occasion was any gross lesion of the retina detected. The only peculiar symptom was a marked disproportion between the size of the veins and of the arteries—the former were always large and full, while the latter were at times so contracted that they were almost thread-like.

All this is in very marked contrast to what is often seen in the second group, when retinal changes may be discovered by the ophthalmoscope, and yet the patient be quite unaware that there is anything wrong with the eyes. The further progress of the case just referred to is a striking instance in point, for shortly after the prolonged uræmic attack that has been noted there was copious epistaxis, and on the following day numerous hæmorrhages could be seen in the fundus oculi. As time went on the optic disc became inflamed and the retina œdematous, while hæmorrhages accompanied by white spots were scattered all over the fundus; and yet, in spite of the presence of such gross lesions, there was no complaint whatever of difficulty of sight. To me this case has always been a very impressive lesson as to the absolute need for, and the great value of, careful ophthalmoscopic examination though no subjective symptoms may be complained of or admitted by a patient.

Cases of albuminuric retinitis naturally divide themselves into two groups according as the lesions in the fundus oculi are inflammatory or degenerative. The inflammatory form is characterised by the occurrence of œdema, hæmorrhage, and inflammation, and is usually found associated with dropsy and with the presence of albumen in considerable quantity in the urine. It must not, however, be supposed that the retinal lesions are dependent either upon dropsy or upon the amount of albumen. The more acute the nephritis the greater is the former, and the larger the quantity of the latter; but it is rare, indeed, to find albuminuric retinitis present at all during a first attack of acute parenchymatous nephritis. The eye changes occur most commonly when the acute attack supervenes on previously existing chronic nephritis. In that case the kidneys have, for a long time, being doing their work inadequately, and the blood has, in consequence, become charged with waste products, which by their toxic influence have excited inflammatory changes in the optic nerve and retina. Hence the neuro-retinitis comes on suddenly, and

runs a violent course. Still, notwithstanding this, it may, under favourable conditions, pass off, leaving no trace, as is well illustrated in the phenomena observed in retinitis albuminurica during pregnancy. Here the onset is acute, the progress rapid, and sight lost more or less completely, yet these apparently hopeless symptoms admit of a favourable prognosis. The following is a good example:—

The patient, a lady, about 30 years of age, during her first pregnancy, suffered severely from albuminuria, accompanied by dropsy and symptoms of uræmia; but the eyes were not affected, and after she regained strength every trace of albumen disappeared from the urine. During her second pregnancy, which occurred four years after the first, there was in the sixth month a return of the albuminuria, anasarca was general, and just before the birth of the child she was seized with severe attacks of eclampsia, followed by uræmic coma. After parturition it was clear that sight was very defective. Four months elapsed before she was well enough to permit of the eyes being examined by the ophthalmoscope, and it was then found that there were on each fundus extensive retinal hæmorrhages, situated for the most part between the optic disc and macular region. There was intense neuro-retinitis, and numerous white patches of exudation were scattered about. The macula of the left eye was occupied by a hæmorrhage, and with the right eye closed the patient was unable to distinguish even large objects when she looked straight at them. When the eyes were again examined, three months later, it was found that all the hæmorrhages had disappeared, and the only visible trace of the former extensive mischief was a cluster of pearly-white spots in each macular region. The vision of the right eye was now up to the normal, but that of the left was not quite so good, owing to a slight degree of metamorphopsia. The albumen in the urine was reduced to a mere trace. On re-examination after the lapse of a year, sight was found to be normal; but the left eye remained unduly sensitive to light, and careful testing revealed that in it there was still slight distortion. When I saw the patient last, in the spring of 1902, the eyes were perfectly normal; there were no traces of white spots in the macular region, and the most careful testing failed to reveal the slightest evidence of metamorphopsia.

The degenerative form has its origin in pathological changes

in the retinal arteries, and we are indebted to Mr. Marcus Gunn for an admirable description of the ophthalmoscopic appearances. The arteries are irregularly contracted, abnormally tortuous, and even the very smallest exhibit a brightness of the central light streak which is very characteristic. The artery loses its natural translucency, and becomes hard and rigid, and consequently, when it crosses a vein, it not only conceals the latter from view, but also mechanically exerts so much pressure upon its walls that the blood-flow is hindered. The result may be a hæmorrhage, and on account of œdema of the retina, more especially in the neighbourhood of the optic nerve and macula, the fundus does not present a bright red reflex, but appears grey and hazy. In addition to these vascular changes—the hæmorrhages and the œdema of optic disc and retina—there are always present minute white dots, whose stellar arrangement around the macula, and bright shining appearance, are perhaps the most characteristic feature of the ophthalmoscopic picture. The anatomical changes which explain these lesions of the fundus oculi were investigated by Brailey, and are similar to those described by Gull and Sutton as "arterio-capillary-fibrosis." They are found for the most part in association with the contracted granular kidney, but it is important to note that they are not of necessity dependent upon the renal disease, for in many instances they are but a part of a wide-spread general disease of the blood-vessels. They creep slowly but steadily along the walls of the arteries (their insidious progress being for a time marked by no symptoms), and remain quite unsuspected until, little by little, they reach an advanced stage. In this lies the importance of routine ophthalmoscopic examination in all cases of suspected granular kidney in which the urine, though it be copious and of low specific gravity, may contain albumen only intermittently and in minute quantity. Moreover, there is always an intimate connection between the retinal lesions and the state of the blood-vessels in the brain, for in not a few instances the patient dies from cerebral hæmorrhage.

It sometimes happens that inflammatory changes become superadded to the ordinary signs of degenerative albuminuric retinitis, and this always indicates that an attack of acute or sub-acute nephritis has supervened upon one which has been for a time chronic. When the patient is syphilitic, the vascular changes in the fundus may be still more pronounced, and be accompanied by pigmentary degeneration.

Although it is convenient to speak of kidney disease as

divisible into two groups, characterised by the presence or absence of dropsy, and to connect with each of these groups a definite form of albuminuric retinitis, it must be remembered that the divisions so merge into one another that it is not possible to distinguish different varieties of renal disease by the ophthalmoscopic appearances associated with them. Retinal changes may occur in any form of Bright's disease, though they are most frequently associated with chronic renal cirrhosis. Both eyes are, as a rule, affected, and while the neuro-retinitis is usually more advanced in one than in the other, one of the most remarkable features is the symmetry of the lesions. In exceptional cases, however, more particularly in the retinitis associated with the albuminuria of pregnancy, one eye may remain perfectly normal.

To diagnose a case of albuminuric retinitis by the ophthalmoscope is much easier than to appraise its true significance. It is generally admitted that the occurrence of this symptom adds additional gravity to the prognosis, and if the results of hospital statistics were accepted the outlook would be gloomy in the extreme. There is, however, a great difference between the ordinary hospital patient and the ordinary private patient, and the reasoning which is applicable in dealing with the one requires, in most instances, to be considerably modified in the case of the other.

The main point to remember is that albuminuric retinitis is a late manifestation in the course of renal disease; that, as a rule, it is associated with the phenomena that are attendant upon high arterial tension, and that its onset may be determined by general toxæmia, by vascular degeneration, or by these conditions combined. Prognosis will obviously be more favourable in the inflammatory group than in the degenerative, because in the former the toxic elements may be removed from the blood. That is why recovery is so frequent in albuminuric retinitis of pregnancy, and why, when eye symptoms occur early and are threatening to destroy sight, premature labour should be induced with the least possible delay. Many cases of recovery from albuminuric retinitis are on record, but their interest depends not so much upon the disappearance of the eye-changes as upon the removal of the cause of the albuminuria. Prognosis must, therefore, be considered not only in relation to sight, but also in relation to life.

1. *Prognosis in relation to sight.*—Speaking generally, sight is not usually lost through albuminuric retinitis alone, and the degree of amblyopia present depends upon the amount of destruction due to degeneration and to the position of the

retinal hæmorrhages. When the ophthalmoscope clearly reveals changes in the blood-vessels arising from arterio-capillary-fibrosis it will be safe to predict that vision will become steadily impaired, because the vascular degeneration is not only likely to be progressive, but also to lead to local malnutrition and further hæmorrhage. As has already been observed, however, hæmorrhagic retinitis may be present and yet no complaint be made of defective sight. The fundus may be spotted with flame-shaped blood clots, but so long as these are peripheral, not only may the patient be quite unconscious of their presence, but subjective examination may fail to detect anything wrong. It is very different, however, when the blood-clot occupies the macula, or when its round shape shows that it is situated deep in the substance of the retina, for then the sentient layer is implicated and the consequent disturbance of the rods and cones, if it does not produce a blank in the field of vision, will certainly induce metamorphopsia. A blank in the central area of the field of vision, due to a hæmorrhage in the macula, interferes completely with the patient's power of reading: and, although the blood-clot may become absorbed in course of time, it has probably caused so much disturbance in the regular arrangement of the sentient elements that objects are seen with their outlines seriously distorted. As a patient once put it to me, "Everything seems done in rustic work."

Metamorphopsia is always a very painful symptom, and although it may pass off, as in the case recorded in an earlier part of this lecture, the prognosis is all the more unfavourable because the macula has been seriously involved. When, in the course of a chronic attack of albuminuric retinitis, acute symptoms, marked by œdema, exudation, and hæmorrhage, become superadded, an attack of acute parenchymatous nephritis has, as a rule, occurred; and the onset of such retinal changes, although causing greater anxiety at the time, may yet improve the prognosis of the disease as a whole by placing the case in the category of those where the kidney lesion is for the most part a local affection rather than a portion of a wide-spread degenerative change.

2. *Prognosis in regard to life.*—Even if I felt competent for the task, this is neither the time nor the place for a complete discussion of albuminuria, so I shall content myself by simply mentioning the general signs and symptoms which ought always to be attended to when giving an opinion in a case of albuminuric retinitis. First of all, it should be remembered

that albuminuric retinitis is rarely found with acute inflammation of the kidney, except when the acute symptoms are superadded to previously existing chronic disease, and the main points to be attended to are the occurrence of uræmic seizures; the degree of œdema of the internal organs as evidenced by dyspnœa, vomiting, or purging; and the onset of acute inflammation of the serous membranes, or of persistent hæmorrhage. In cases associated with pregnancy the prognosis is usually favourable, but in them also danger becomes imminent if eclamptic seizures are frequent and severe. Formerly, when retinitis albuminurica was discovered in the course of chronic renal cirrhosis it was regarded of such serious import that practically a death sentence was passed upon the patient. It was found, however, that although many did die within a few months of the retinal changes having been detected, others, who were more comfortably circumstanced, and consequently better able to take care of themselves, lived for several years. It is not wise, therefore, to disturb the general perspective of the disease by assigning to the eye symptoms a position of importance out of all proportion to the others. They ought to be regarded as part and parcel of the renal disorder, and when a prognosis as to life has to be given, they must be looked upon in their due relation to the whole. An unfavourable opinion must always be expressed when retinitis albuminurica is associated with steadily failing strength, due to a large daily loss of albumen; with a weak heart and a low tension pulse; with diminished excretion of urine; with the occurrence of uræmic symptoms; and last, but probably most important of all, with progressive anæmia.

The treatment resolves itself very largely into a question of how a kidney which is failing to adequately discharge its proper function can be aided and protected. For the eye changes themselves very little can be done, except to advise the patient to avoid straining the eyes over fine work, and to protect them from exposure to bright light. Good can be effected only by improving the condition of the blood, and this may be accomplished by calling on the skin and the intestine to aid the kidney in eliminating waste products. Of these, the skin is the more important, as skin and kidney present many points of similarity. Both have a common origin, for it was from the skin that the true kidney was originally developed, and the uriniferous tubules and capsules bear a striking resemblance to the coils of the sweat glands. By an involution of the ectoderm, the convoluted tubules

have become all collected together in the interior of the body, where they have joined with blood-vessels from the mesoblast and formed what we call the kidney, whereas the sweat glands have scattered themselves over the surface of the body. Owing to their community of descent, kidney and skin have a wonderful sympathy with each other, and one of the most familiar facts in clinical medicine is the manner by which renal inadequacy is compensated by increased cutaneous secretion. To promote free action of the skin is one of the first principles of treatment, and, as a rule, this is best accomplished by means of the vapour bath. But while every effort is made to promote free elimination on the one hand, care must also be taken on the other to supply the patient with food of such a kind as will throw little work on the kidney. Skimmed milk is the ideal substance for this purpose, but care must be taken not to adopt too limited views about diet. The patient must be considered as well as the disease from which he is suffering. To maintain strength is essential, and whatever tends to increase anæmia does harm. The following is a good case in point:—

The patient was a man, 38 years of age, who, in April, 1900, after exposure to cold and wet, was suddenly seized with acute inflammation of the kidneys, accompanied by copious hæmorrhage from the gums and nasal mucous membrane. There was a large percentage of albumen in the urine, and extreme general anasarca. He was removed to a hospital, where he was carefully restricted to a diet of skimmed milk, the medicines administered being imperial drink and occasional doses of compound jalap powder. Under this treatment he became steadily worse, till, as it was thought he was going to die, his wife took him home in the month of August. About the same time he began to complain of failing sight, and vision deteriorated so rapidly that, when I saw him on 1st September, in consultation with Dr. Gibb, of Paisley, he was practically blind in both eyes. In the right eye the ophthalmoscope revealed intense neuro-retinitis, with hæmorrhage into the vitreous, and in the left eye all the signs characteristic of acute exudative retinitis albuminurica. The man was undoubtedly in a most serious condition, and stated that he felt very ill indeed. He was weak and breathless, and very anæmic; there was marked general anasarca; the pulse was quick and the heart sounds feeble; and the urine contained 2·5 per cent of albumen, and was diminishing in quantity. It was decided that the skim milk treatment had been tried long

enough, and the patient was put upon a more generous dietary, which was to be gradually increased as he became able to digest more food. The medicines prescribed were ammoniac, potash, and iron. At the end of two months he was in every way improved, and was able to distinguish large letters. He was urged to continue his treatment steadily, and as his appetite and digestion were excellent, he was encouraged to take food freely and to drink large quantities of milk. Three months later he was reading large print, and was able to write a little; and some months after that again, he resumed his duties as sergeant-instructor of volunteers. I saw him last in February, 1902, when he told me that he had been regularly on duty, that he felt perfectly well, that the albumen had disappeared from his urine, and that, although he still had difficulty in reading, he was able to perform with ease all the book-keeping duty in connection with his post.

It must not be forgotten that many patients suffering from albuminurica retinitis have also suffered from syphilis, and in these cases mercury is clearly indicated. The drug must, however, be used with great caution, for patients suffering from albuminuria often show unusual susceptibility to its action, and salivation is readily induced. Moreover, under the influence of mercury, the albumen may disappear from the urine and the inflammatory changes in the fundus oculi subside, but the patient may die from sheer exhaustion. It follows, then, that there can be no specific remedy for albuminuric retinitis. At one time fuchsin was largely prescribed, with the result that, though there was in some cases a diminution in the amount of albumen passed, there was no real and lasting improvement in the patient's health. Nor could it be otherwise, for the albuminuria, like the retinitis, is merely one of the symptoms, and not the disease itself. A rational therapeutics can be arrived at only by careful study of the natural history of the disease; and, if the views expressed in this lecture be correct, the proper treatment for all patients suffering from albuminuric retinitis is, as far as possible, to provide them with proper food, warm clothing, comfortable surroundings, plenty of pure water and fresh air, and to make judicious use of simple eliminants and of tonics containing iron.

THE VISION IN VARIOUS AFFECTIONS OF
THE EYE.By LESLIE BUCHANAN, M.D.,
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IN the following pages it is intended to bring together a few notes and the results of observations which have been made from time to time upon the proportion in which the visual acuity is reduced in various diseases and affections of the eye.

To some it may appear unnecessary to bring such a subject forward, but experience shows that there are many cases in which there is more than one pathological condition in an eye, and in which it is advisable to be able to say, even approximately, what proportion of the diminution of visual acuity is referable to each.

This is especially the case in a medico-legal aspect, but it is often of great assistance in general medical and ophthalmic cases, as the visual acuity is very generally the point which appeals to the patient as of the greatest importance.

Further, there are undoubtedly many cases in which the visual acuity is an important guide in the framing of a diagnosis, especially in diseases of the optic nerve where there are only minute changes to be observed which may readily be overlooked.

The method of ascertaining the visual acuity.—The visual acuity or power of vision is tested by finding out the greatest distance at which two points of black can be distinguished as separate. Considering the retina as made up of a number of sensitive elements placed closely together, and not as a uniform layer of sensitive tissue, it will be seen that an interval of non-sensitive material must intervene between the light perceiving structures. Calculation has shown that the interval is a very small one, namely, the visual angle is equal to 1 minute of arc.

As it is undesirable that the accommodation effort should play any part in the test, the smallest distance is chosen at which it is considered that light rays emanating from a point reach the eye almost parallel, and a test-object of suitable size is placed there. This distance is approximately 20 feet or 6 metres. The test-object most frequently used is one of the letters of the alphabet, and this is constructed in a square which is subdivided into 25 squares, each of which is of such

a size that its side will subtend an angle of 1 minute of arc at that distance. The small squares constructed for the distance of 20 feet measure approximately 2 mm. The ordinary "test-types" consist of a series of rows of alphabet letters, constructed so that each row should be read at a definite distance, 20, 30, 40, 50, 70, 100, 200 feet (or metres corresponding).

The patient to be tested is required to read with one eye only, from a distance of 20 feet, as many rows of letters as he can, from the largest downwards to the smallest. If the smallest row can be read, then the visual acuity is normal, and is expressed for purposes of comparison, as a fraction $\frac{20}{20}$. The numerator of the fraction is the distance at which the patient is placed from the test-object, and the denominator is the distance at which the smallest row of letters, which he can read, should be read at. If only the largest letters can be read, the (V.A.) visual acuity = $\frac{20}{200} = \frac{1}{10}$ normal. If this even cannot be seen, it is ascertained at what distance fingers (held against the coat) can be counted, and if even this is too severe a test, the hand may be moved slowly up and down between the eye to be tested and the light, when if this can be seen, the vision is = hand movements.

The lowest degree of visual power which is taken into account is the ability to recognise the presence of a light, as a candle, in a dark room; V.A. = perception of light, or P.L. for short.

For convenience in dealing with the subject, the various affections of the eye may be classified under three heads:—

1. Errors of refraction.
2. Opacities in the media.
3. Affections of the receptive and conducting organs.

1. *Errors of refraction.*—In cases of error of refraction, it may be taken for granted that the visual defect is due to the imperfection of the image which is formed on the retina. The image is either badly focussed, as in hypermetropia and myopia, or is distorted, as in cases of astigmatism.

In hypermetropia a considerable amount of improvement in the visual acuity may be brought about by exercise of the power of accommodation, by means of which the image can be focussed more accurately. This is seen most markedly in young persons, whose range of accommodation is still extensive, and who can frequently see the normal amount ($\frac{20}{20}$) although they may be hypermetropic to six or eight dioptries.

In older people, however, the power of focussing is much

more limited, and at the age of sixty-five or seventy is very small. Here, then, one dioptré of hypermetropia will tell very severely upon the visual power. An instance of this may illustrate the point.

A man, aged 68, was seen recently, whose visual acuity was only $\frac{2}{80}$, and as no other change could be detected to account for the defect, the small amount of hypermetropia which was noted, only .75 D, was corrected. The use of a correcting lens improved the vision to $\frac{2}{80}$ with ease.

This is not an exceptional case; many such have been seen and noted, but such a very small error might easily be passed over as unimportant.

In myopia the visual acuity is usually low, as in this case; no effort of accommodation avails to focus the image more sharply, and young persons and adults are equally affected.

The usual proportion in which the visual acuity is lowered is somewhat as follows:—Myopia of one dioptré leaves V.A. = $\frac{2}{40}$, two dioptres V.A. = $\frac{2}{60}$, three dioptres V.A. = $\frac{2}{80}$, five dioptres V.A. = $\frac{1}{100}$, &c.

In cases of astigmatism of low degree, the visual acuity is sometimes but little reduced, the normal amount being seen in spite of .5 D of hypermetropic astigmatism. One dioptré of hypermetropic astigmatism may leave V.A. = $\frac{2}{30}$, three dioptres V.A. = $\frac{2}{60}$, &c.

If the astigmatism be myopic, however, the visual acuity is usually considerably lower than this, probably only half the amount.

In compound and mixed astigmatism, the visual acuity varies according to the amount of influence which accommodation can exercise upon the sharpness of the image, and also with the age of the individual.

2. *Opacities in the media.*—In the case of opacities in the media, the visual acuity is generally affected in two ways. The amount of light gaining entrance to the eye is diminished and certain rays are distorted, so that the image ultimately formed is both feeble and badly formed.

In all such cases, it may be said, the position of the opacity exercises a very important influence on the vision, much more so than the absolute density in many cases.

A faint haze, only discernible by means of focal illumination, if situated in the centre of the cornea, may reduce the visual acuity to $\frac{2}{40}$ or $\frac{2}{60}$, whereas, if laterally placed, the opacity may interfere with vision but very little.

A small grey speck on the cornea, such as remains after the

healing of a phlyctenular ulcer, if centrally situated, may reduce the vision to $\frac{2}{10}$ or $\frac{3}{10}$, whilst a much larger and even denser opacity, which leaves the centre of the cornea clear, may leave the vision $\frac{3}{10}$ or $\frac{2}{10}$.

In many cases where there is a leucoma of the cornea of considerable extent, in spite also of adhesion of the iris to the corneal scar, if there is a small area of clear cornea in front of the (it may be misplaced) pupil, it is often surprising what an amount of vision remains.

As it is intended here only to take into consideration the conditions of the eye quiescent, so far as external parts are concerned, the punctate opacities on the posterior surface of the cornea, turbidity of the aqueous humour, &c., such as occur in iritis, cyclitis, glaucoma, &c., will not be taken up.

Lenticular opacities vary as widely in regard to the influence which they exercise upon vision as they do in their situation and extent.

Generally speaking, the visual acuity varies in such cases from $\frac{2}{10}$ in some cases of very minute centrally situated congenital opacities to perception of light only, in fully mature senile, and other forms of cataract,

Small anterior and posterior polar cataract may reduce the vision to $\frac{2}{10}$ only, as they leave a clear portion of lens, by means of which rays of light may pass unimpeded to the retina. Lamellar cataract, for the same reason, may leave vision equal to $\frac{2}{10}$ to $\frac{2}{100}$, although the details of the fundus can hardly be seen with the ophthalmoscope, unless the pupil be dilated. In partially formed senile cataract, however, there is often great difficulty in forming a correct estimate of what the vision should be, as sector-like opacities, spots and clouds, may exist in the lens, which, although differing but little in appearance, give rise to a widely varying degree of difficulty of vision. Thus, opacities in one eye may appear to be as dense and as numerous as the opacities in the other, but a small chink of clear lens may be left in a useful position in one, whilst this is not so in the other, with the result that the vision of the former eye is $\frac{3}{10}$, whilst of the other eye it is only $\frac{2}{100}$ or even less.

Opacities in the vitreous body, such as floating bodies, do not, as a rule, give rise to much disturbance of vision. They may, however, be so situated as to lie continually in the line of vision, when they may cause much trouble by blurring any minute object looked at, and thus reduce vision to $\frac{2}{10}$ or so.

Hæmorrhagic effusions into the vitreous body may cause great dimness of vision at first, but, being absorbed, may

have vision equal to $\frac{5}{10}$ or $\frac{7}{10}$. In less marked cases, however, where the injury has been less severe, and only a small amount of blood effused, the ultimate result may be still more favourable.

In cases in which the vitreous body is, as it seems, filled with very fine granular opacities, as in syphilitic neuro-retinitis, it is often remarkable what an amount of vision may be retained.

A case of this nature, recently seen, may be quoted as an example.

A man (21 years of age) was seen complaining of dimness of vision and headaches.

On examination of the eyes the visual acuity was found to be $\frac{2}{100}$ in each eye.

On ophthalmoscopic examination, it was found that only an exceedingly dim view of the retina could be obtained owing to the fact that the vitreous body was densely clouded by very fine granular opacities. Only one vein in the right eye could be seen, very dimly, curving over what was supposed to be the edge of the optic disc. The disc itself was quite unrecognisable. After a fortnight's treatment the visual acuity was raised to $\frac{7}{10}$, whilst as yet the details of the fundus oculi could not be seen.

Still later, when the vision was $\frac{7}{10}$, the details of the fundus were only indistinctly visible, although the condition could be recognised.

In this case the illumination was by a powerful gas flame giving a light of great penetrating power.

3. *Affections of the receptive and conducting organs.*—It is in this class of case that the greatest difficulty is experienced in forming a correct estimate of the effect which the disease exercises upon the visual power of the eye, when objective examination alone can be trusted.

The diminution of visual power is the result of either of two sets of changes in the tissues, or it may be brought about partially by each.

When the receptive structures, such as the retina, are partially destroyed by degenerative changes, the stimulus of light is not capable of influencing the sentient organs, and when the conducting structures, such as the optic nerve, are similarly affected, the effect of the light stimulus cannot be perfectly conveyed to the brain.

As, however, the appearances of the retina and of the optic nerve entrance, as seen by the ophthalmoscope, are but an

imperfect guide to the actual change, which may be microscopic in degree, considerable care must be exercised in forming an estimate of the result of any changes seen upon the visual acuity.

Retina.—In the case of changes in the retina, the effect of comparatively large lesions may be disproportionately small, on the one hand, or the effect of a very minute lesion may be very great, on the other.

The principal point to be looked to is the involvement of the macula region, for it is well known that extensive changes in the retina may exist for a considerable length of time without involving this small area, and that in consequence of this fact the visual power may be maintained at the normal amount.

White spots of exudation into the retina and hæmorrhagic effusions may be present round the macula region for a considerable time, and still the visual acuity may remain normal or almost so.

The white spots of exudation can be shown to have their position in the outer layers—the external nuclear layer, for instance—of the retina. In this situation they may be present without giving rise to much disturbance of the tissues, as there is room for a certain amount of slow expansion. Smaller spots may be situated in the inner layers of the retina without causing much defect of vision.

Hæmorrhages into the retina, if flame shaped, are, as is known, usually situated in the most internal layer of the retina. Here they have plenty of room for expansion, as the tissues are somewhat elastic.

If situated in the deeper layers, the hæmorrhages tend to assume a circular shape, as seen by the ophthalmoscope, and owing to their position tend to do more damage than would exudation of other nature on account of the sudden occurrence. Such circular hæmorrhages may be situated in any layer of the retina, from the nerve fibre layer to the outer nuclear layer.

If either a hæmorrhage or a spot of exudation be situated in the macula, of course, vision is bound to be seriously and probably permanently damaged.

Hæmorrhages and spots of exudation occurring in the region of the bacillary layer, between the external limiting membrane and the layer of hexagon pigment cells that is, must cause a serious damage to the very delicate structures, which will probably be permanent. Such changes, if small, are quite

impossible in the matter of exact diagnosis, as their precise position cannot be fixed upon with certainty. Large areas of exudation or hæmorrhages may be diagnosed as giving rise to separation of the retina, and the attendant loss of vision is manifest.

In the case of degenerative changes in the retina, such as syphilitic chorio-retinitis, where there is pigment displaced, probably from the hexagon pigment cell layer, and in pigmentary retinitis, where pigment is deposited in the neighbourhood usually of the blood-vessels, fibroid changes in the retina also take place. In such cases the periphery of the retina is often first involved, central vision remaining good. In chorio-retinitis, however, the distribution of the disease is not usually so restricted. As a rule, it may be said central vision is not affected in good light in cases of retinitis pigmentosa until quite a late stage, when atrophy of the optic nerve may be present in a marked degree.

In chorio-retinitis the central vision is often affected early, as optic nerve atrophy is of more early occurrence.

In cases of embolism of the central artery of the retina, the blindness which inevitably follows is permanent, and there is a very distinct change in the fundus oculi, so that little need be said of this condition.

Where only one branch or two branches are involved in a case of embolism, the visual defect may not be discovered by testing the visual acuity alone, but perimetric investigation will soon bring out the defect.

Similarly in other well defined lesions, such as tumours and cysts in the retina, which are very rare, perimetric investigation may be required to localise the defect of vision.

Choroid.—As many cases of what is termed choroiditis in reality affect both the retina and choroid, and probably have the earliest changes in or near the layer of hexagon pigment cells, it will be expected that great disturbance of vision will result.

So long, however, as the macula region is not affected, vision may remain remarkably good in spite of the fact that the disease is widespread, $\frac{2}{3}$ being often retained.

If the macula region is affected, of course, profound diminution of vision may be found, owing to disturbance of the bacillary layer of the retina, which so closely adjoins the pigment cell layer.

Very frequently, however, it is found that although the macula is not involved the visual acuity is low, and in such

cases examination of the optic nerve may afford an explanation of the defect.

The optic nerve will often be found to be highly atrophic in such cases, being affected possibly by the choroidal degeneration, on the one hand, or by the same disease, syphilis, &c., on the other.

In cases of tubercular choroiditis of miliary type, of Tay's choroiditis, tumour, &c., the visual defect may be only discovered by perimetric examination.

Optic nerve.—Generally speaking, it may be said that the appearance of the optic nerve, as seen by the ophthalmoscope, affords but little clue to the amount of vision which is retained.

Cases are repeatedly seen in which, whilst there is undoubtedly acute optic neuritis, the vision is perfectly good; and again, in which, whilst the change in the nerve is acute it is not very intense, and yet the vision is reduced to light perception or little more.

It is not only, or even especially, in acute cases, however, that this apparent discrepancy is found, for in cases of atrophy the same fact holds good. Two cases may be seen in which the optic nerve presents an extreme degree of pallor, and in one the vision may be normal, whilst in the other, without any other apparent cause, the vision may be $\frac{1}{200}$ or less.

Even in the same subject this interesting fact is frequently demonstrated, so that it is unlikely that any constitutional peculiarity is the cause of the difference.

Taking, first, the acute forms of neuritis, in which there is present the characteristic picture of optic papillitis, it is found that the visual power ranges between $\frac{2}{20}$ and light perception only. Cases have been recorded in which perception of light even has been abolished in acute optic neuritis, but they form the exception to the rule.

The explanation of this peculiar fact is not to be found in the duration of the affection. A case was seen, and followed out carefully with particular regard to this fact over a period of eighteen months, in which the visual acuity was never below $\frac{2}{20}$. In this case (one of albuminuric neuritis) the optic nerves were intensely swollen, there were large patches of white exudation round the site of the disc, and many large hæmorrhages were seen. These changes slowly passed away, and nine months after the onset almost no evidence of the past disease could be found in the fundus oculi, whilst the vision remained absolutely normal, and there was no contraction of the field of vision. The man died nine months

afterwards of cerebral symptoms (possibly uræmic) and no *post-mortem* examination was made.

In other cases it is found that the visual acuity is affected at an early stage, whilst the optic nerve condition is at its height, and only a matter of days, probably, has elapsed since its very beginning.

The cause of the difference, then, must be in connection with the nature of the pathological change.

It is probable that the interference with vision is the result of pressure, and that such pressure is caused by œdema more than by cellular exudation.

Such œdema may last for many weeks, however, without causing serious defect, as has been seen: hence it is possible that it is not the presence alone, but the actual position of the œdema, which brings about the visual defect.

When the œdema is mainly confined to the intraocular extremity of the nerve, there is room for the expansion of the tissues, and the axis cylinders of the nerve escape damage. If, however, the œdema extends behind the lamina cribrosa, the nerve fibres will be subjected to pressure by the unyielding sclerotic at the optic pore, and thus permanent or temporary damage, according to the amount of pressure, may result.

After the acute stage of optic neuritis has passed away, it is common to find that, even although the visual power has hitherto been good, this does not remain so for long. Owing to contraction of newly-formed fibrous tissue in the optic nerve, consecutive atrophy ensues, and the visual power is then seriously and permanently damaged. In such a case the appearances of the optic nerve are peculiar and significant. The nerve remains larger than usual, the arteries become smaller, whilst the veins (for a time) remain larger than the normal, and the whole nerve assumes a white glistening appearance. In such a case the vision may be as much as $\frac{2}{5}$, or may be reduced to *nil*.

A more happy result is probably more frequent, especially in cases of optic neuritis, which arise in connection with albuminuria. The vision may, although very poor at first, improve in a wonderful degree, and may even be restored to the normal.

It is probable that in such cases there is little or no fibrous tissue formed in the nerve, and that the structure is not damaged either by direct pressure or by contraction of the vessels which supply the optic nerve itself apart from the central retinal vessels.

Consecutive atrophy of the optic nerves is often very marked after the optic neuritis which occurs in connection

with cerebral and acute febrile diseases, whilst it is uncommon after neuritis of albuminuric origin.

In cases of primary optic nerve atrophy, such as occurs in connection with degenerative changes in the nervous system, the diminution of vision is often very gradual. In such cases it is an essential shrinkage, a sclerosis, of the tissues, which takes place, the nerve fibres gradually losing their conducting power either in consequence of pressure or of primary degeneration.

In the early stage the ophthalmoscopic appearance of the optic nerve may be but little changed, but in late stages the colour is altered to a dull grey, and the nerve is small in diameter and hollow.

It may be the case that the nerve becomes silvery grey in colour and is of even appearance, there being no gradation of colour from margin to centre, before the complete dull grey stage is reached, and in such a case the vision may be $\frac{2}{60}$ or so, whilst in the later stage it is $\frac{2}{200}$ or even less.

Even before any marked change in the ophthalmoscopic appearance of the nerve has become evident, the visual power may be reduced to $\frac{4}{40}$, and it is in consequence advisable to watch such cases closely, especially as it is well known for many years now that such an intrinsic atrophy of the optic nerve may prove to be the first symptom of a more widespread degeneration of the brain and cord.

In the somewhat rare condition of hereditary optic nerve atrophy the changes may be small, so far as ophthalmoscopic appearances indicate, but the vision may be reduced to $\frac{2}{200}$.

Perimetric examination will often reveal great contraction of the visual field, whilst the visual acuity is still fairly good in such cases.

The change in the optic nerve, which is so evident in many cases of glaucoma, the cupping, is frequently not a safe guide to the amount of vision retained. This is so, probably, because, so far as the optic nerve itself is concerned at least, the diminution of vision is due to pressure and atrophy. Cases have been seen in which, after relief of hypertension by the successful performance of an iridectomy, the cupping of the optic nerve did not diminish, whilst the visual acuity rose from $\frac{2}{200}$ to $\frac{2}{30}$, and remained there for at least many months (in one case over two years).

Complex cases.—Under this heading may be classed cases in which more than one cause of defective vision is present.

It is especially in such cases, and they are by no means

infrequent, that the utility of having a faint conception of the visual acuity which may be expected in any simple case is fully experienced.

A nebula of the cornea may be present in a particular case, and the vision may be only $\frac{1}{200}$. In such an instance, if it be admitted that the effect is out of proportion with the cause, a refractive error may be found, such as myopia of 3 or 4 dioptries, which would readily account for the balance of the defect. Correction of the error in such a case may improve the vision from $\frac{1}{200}$ to $\frac{1}{40}$, which is very well worthy of consideration.

Similarly, with some change in the optic nerve, a refractive error, such as hypermetropic astigmatism, may exist, correction of which may greatly improve the ultimate vision.

It may seem unnecessary to remark further on this subject, but the fact that it is extraordinarily easy to overlook an apparently small or unimportant cause in the presence of a larger lesion renders it of especial importance.

Two instances which have within the last year come under notice may be briefly noted in illustration.

Miss M. B., æt. 30, was seen by her physician, complaining of very severe headaches and giddiness, and was sent to have her eyes examined. The vision was found to be $\frac{2}{3}$ right, $\frac{2}{4}$ left. There was moderately intense inflammation of both optic nerves, the outlines of which were almost completely lost at all points under œdematous retina. The vessels arched distinctly forwards, so that the elevation of the nerve was estimated at $1\frac{1}{2}$ dioptrie (= 5 mm.) There were white lines of exudation along the vessels for some distance on to the retina. In short, the appearances were those of optic neuritis in an early stage.

Careful estimation of the refraction of the eyes showed that there was a small amount of hyperopic astigmatism. Correcting lenses were tried, but failed to improve vision. It was considered that the amount of optic neuritis was almost too great to be accounted for by the error of refraction, but considering the fact that the girl had been using her eyes to excess of late, it was decided to consider the case one of eye-strain, and treatment was ordered in accordance. After a period of complete rest, the correcting lenses were again tried, and vision was improved to $\frac{2}{3}$ right, $\frac{2}{5}$ left. Unaided vision also was found to be improved, and the pathological appearances of the optic nerves were much less marked.

Still later, the treatment being continued, the unaided vision was found to be $\frac{2}{12}$ right, $\frac{2}{18}$ left, whilst the aided vision was

$\frac{2}{18}$ right, and $\frac{2}{15}$ left. The optic nerves and retinæ had then resumed normal appearances.

Such a case, then, might easily have been mistaken for one of optic neuritis or other origin, although in reality it proved to be an illustration of the fact already remarked upon,¹ that optic nerve congestion, acute and chronic, often accompanies errors of refraction, and is probably due to the strain induced by them.

The second case is that of J. M., æt. 24, assistant manager in a coal mine, who came complaining of dimness of vision only.

His story was that two years ago his vision had failed comparatively suddenly after considerable overuse of his eyes.

He then consulted an oculist, who told him that he was suffering from tobacco amblyopia, and ordered medicine and complete rest. After thirteen months' faithful attention to orders, the vision was not any better, but if anything worse.

He then consulted another oculist, who corroborated the opinion of the first, and gave another medicine. After nine months' further treatment there was still no improvement.

His visual acuity was found to be $\frac{2}{60}$ barely in each eye. The optic nerves were found to be red in the centre and somewhat sharply outlined, appearances quite compatible with the diagnosis given previously. Estimation of refraction, however, showed that there were 2 dioptries of myopic astigmatism, correction of which at once improved the vision to $\frac{2}{80}$ right, $\frac{2}{70}$ left. After wearing this same correction for two months, the unaided vision was improved to $\frac{2}{160}$ right, and $\frac{2}{70}$ left, whilst the aided vision was $\frac{2}{5}$ right, and $\frac{2}{2}$ left. Slight variation of the axes of the cylinders then improved the vision still further.

In this case the man stated that test lenses had never been tried, so that one may consider that the myopic astigmatism had been overlooked, as the nerves presented appearances which were possibly accountable for the defect of vision.

The patient, however, was quite a mild smoker, only 2 oz. per week, and was a most abstemious man in the matter of alcohol.

Many other cases, illustrating the variety of defects which may be overlooked, might be given, but probably enough has been said to show that, however astonishing it may appear, it is easy to overlook one source of defective vision if there is another present which might account for the defect complained of.

¹ *Glasgow Medical Journal*, July, 1899.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—List of Degrees in Medicine conferred on 6th November, 1902.

DOCTORS OF MEDICINE (M.D.)

I.—WITH HONOURS.

- George Lamb, M.B., C.M., Scotland. *Thesis*—"On the Action of the Venoms of the Cobra (*Naja Tripudians*) and of the Daboia (*Daboia Russellii*) on the Red Blood-corpuscles and on the Blood Plasma."
- William Glen Liston, M.B., Ch.B., India. *Thesis*—"Ætiology of Malaria."

II.—WITH COMMENDATION.

- Charles Campbell Cuthbert, M.A., M.B., Ch.B., Scotland. *Thesis*—"A Clinical Study of Renal Cases."
- James M'Haffie, M.B., Ch.B., Scotland. *Thesis*—"On the Complications Occurring in 600 Consecutive Cases of Scarlatina."
- Jean Effie Prowse, M.B., Ch.B., England. *Thesis*—"The Relation of Vesicular Mole to Chorion Carcinoma."

III.—ORDINARY DEGREE.

- George Gardner, M.B., Ch.B., Scotland. *Thesis*—"The Prophylaxis of Mastitis, with Special Reference to the Puerperium."
- Alexander Garrow, M.B., Ch.B., England. *Thesis*—"A Clinical Study of Primary Intrathoracic New-growth, with Special Reference to the variety Lymphosarcoma."
- Archibald Jubb, M.B., Ch.B., Scotland. *Thesis*—"Observations on Some Cases of Pleural Effusion and Empyema."
- Johan Balthazar Knobel, M.B., Africa. *Thesis*—"Some Remarks on the Professional Experience of a General Medical Practitioner in Pretoria, Transvaal."
- James Ferguson Lees, M.B., C.M., Scotland. *Thesis*—"Enteric Fever, with some Suggestions for its Avoidance in Warfare."
- James Livingstone Loudon, M.B., C.M., Scotland. *Thesis*—"Cases Characterised by the Expectoration of Bronchial Casts, with a short Essay on Plastic or Fibrinous Bronchitis."
- Joseph Wilkie Scott, M.B., Ch.B., Scotland. *Thesis*—"Diachylon Poisoning."
- Joseph Milton Thornley, M.B., C.M., England. *Thesis*—"Pathological Changes in Diseases of the Liver, especially in Relation to the Changes in the Bile Ducts and the Production of Cirrhosis."
- John Doctor Young, M.B., Ch.B., Scotland. *Thesis*—"The Value of Uterine Curettings and Wedges from Cervix as Diagnostic Aids, especially considered with Reference to Diagnosis of Carcinoma."

BACHELORS OF MEDICINE (M.B) AND BACHELORS OF SURGERY (Ch.B.)

I.—WITH COMMENDATION.

- George Clark, Scotland.

II.—ORDINARY DEGREE.

John Cairns Christie, M.A., Scotland.	Harry Somerville Martyn, M.A., Scotland.
Hugh William Crawford, Scotland.	Robert Menzies, Scotland.
Mitchell Innes Dick, Scotland.	William Robertson (Blackwood), Scotland.
Alexander Armstrong MacFarlane, Scotland.	Malcolm Bernard Gathorne Siunette, Scotland.
David Duncan Fraser Macintyre, Scotland.	
John Matheson Mackellar, Scotland.	

COMPLIMENTARY DINNER TO SIR WILLIAM MACEWEN.

SIR WILLIAM MACEWEN, Regius Professor of Surgery in the University of Glasgow, was entertained at dinner in the Windsor Hotel on 31st October by a large number of his professional friends, to mark the honour recently conferred upon him by His Majesty the King. Mr. H. E. Clark, senior surgeon to the Royal Infirmary, presided, and Professor Chiene, Regius Professor of Surgery in the University of Edinburgh, discharged the duties of croupier. Over ninety members of the medical profession were present, and apologies for absence were intimated from Sir William T. Gairdner, Sir Mitchell Banks (Liverpool), Professor Ogston (Aberdeen), and Professor Symington (Belfast).

After the usual loyal and patriotic toasts had been duly pledged,

The CHAIRMAN proposed "Health, Prosperity, and Happiness to Sir William Macewen." He said he felt there was a certain appropriateness in his being called upon to discharge this duty, inasmuch as he had been associated with Sir William Macewen for about 32 years. After briefly tracing the career of their guest, narrating his achievements in science, and eulogising his contributions to medical literature, Mr. Clark said they had before them a man who had worked assiduously for the science in which he had taken such a distinguished place, and he had the reward for his labours, not in his title, not in that dinner, but in the recognition of his services all over the world. His name was known wherever surgery was practised. The reasons of his success and the grounds of his reputation seemed chiefly to be, first of all, a well-founded belief in his own powers; secondly, a sincere disregard for mere book teaching; and, thirdly, an enthusiasm and oneness of purpose in the endeavour to arrive at the bottom rock basis of fact, in order to hold fast to that which was true.

SIR WILLIAM MACEWEN, in reply, said the Chairman had referred to the good old days spent in the Glasgow Royal Infirmary, the birthplace of antiseptics, that noble institution,

the parent of many kindred ones, whose greatness did not diminish as one receded from it, but ever increased in their sight—an institution which had been blessed by having as directors men of sterling worth, upright probity, and straightforward honest intention. They were withal gentlemen in the truest acceptation of that word. The staff differed from them on more than one occasion, and sometimes very actively, but they always felt they were safe in their hands; they would never condescend to intrigue or unfair advantage. Besides that, they aided in every way in their power, and as far as their means permitted, the advancement of scientific work. They looked to the interests of the institution, and were proud of it and of any work which was done therein. He could not help alluding to an incident in connection with his own career, when a very young man. The anti-vivisectionists published a black list in which his name was included, and sent this list to all the institutions with which he was connected, along with a letter threatening the withdrawal of their subscriptions from these institutions unless he were peremptorily dismissed. The chairman of the Royal Infirmary at that time, the late Mr. William MacEwen, brought the paper to him and asked whether he had seen it. After reading it, he (Sir William) asked what the directors intended doing. Mr. MacEwen said they had told the writer of the letter that they had no intention of acceding to their request, and if their charity and Christianity were frightened by such a bogie, the Royal Infirmary could get on quite well without their subscriptions! It took a man to act that way. It was peculiarly gratifying to him to see present some of the directors of the Royal Infirmary, and especially Mr. Hugh Brown, who so long and so worthily had held the reins as chairman of directors. He and Mr. David M'Cowan, the hon. treasurer, who also honoured them with his presence, were connected with the Royal Infirmary before he knew it, and, though their ways lay far apart, he was proud to count them among his personal friends. During all these years they had been unwearied in their devotion to the great charity and ever alert to her best interests. The Chairman had alluded to the time when they were boys—possibly, he might even say, merry, merry boys, together—in the Royal Infirmary. It would not be meet, in this company of grave and reverend seigneurs, to condescend to particulars regarding the frolic and fun which the house surgeons participated in in these days. Since that time their set of house-men were all scattered—some, alas! have joined the majority—time dealing gently with others, though mellow

ing all. Two entered the army medical department and had attained the rank of colonel—Colonel Coats and Colonel Leckie—one was a prosperous London physician, and another, a most successful practitioner, was in Jersey. One was lost sight of for many years; he could not trace him. But when an attempt was made to rob the university of her legal rights, his (Sir William's) name got mixed up somehow or other with the defence of these rights, and a newspaper correspondence ensued, which reached the ends of the world and unearthed this long-lost unit, who sent a letter of fervent encouragement—perhaps too pithily expressed. Then there was Dr. Allan, who sat in the same classes with him at school and at college, and he knew of no one who had led such a Christ-like life. The Chairman had attained the enviable position of senior surgeon to the Royal Infirmary, and had won honour on the field of battle as chief of the Scottish Hospital. He wore his honours lightly, however, and remained the same decent little soul as of yore. He could not help alluding to the many house surgeons whom he had had, to whom he owed a great debt for their valuable assistance and unwearying effort, and who, he felt, if any honour had been rightly bestowed on him, should have their full share. He was proud that many of them had reached already positions of trust and eminence, and he was sure that for them these were but the beginnings of greater things. In speaking of rewards and titles, he hoped they would not consider him ungrateful if he could not help thinking of the silent army of faithful workers in science who had devoted their lives to research, and who at this moment are in seclusion, engaged in a struggle for the elucidation of many problems, nothing daunted by the fact that these endeavours may end in failure, but determined to pursue these without hope of reward. A crust of bread has ever been considered enough for a philosopher! It had been his lot to be entertained at complimentary dinners in places far apart on both sides of the Atlantic, but the present differed widely from these. In the first place, the hosts were entertaining an abstract quantity, an imaginary person whom they had conjured up in their own minds, from the impressions received by them from printed symbols, conveying certain thoughts and descriptions. To-night he was honoured by being entertained by men who had come into close contact with him, and many of whom he had met in the rough and tumble of life. Therefore, he regarded this great meeting of professional friends as one of the greatest honours which had been or could be conferred on him. The Chairman had referred to recent.

Coronation honours bestowed by the Royal hand, honour which was unexpected, unsought, and uncoveted—though one would indeed be content to live in the same category as John Hunter—but that honour had been greatly enhanced by the kindly endorsement which the Chairman and that meeting had just given.

PRINCIPAL STORY, in reply to the toast of "The Scottish Universities," proposed by MR. MAYLARD, said that the Glasgow authorities were doing their best to develop to the full the scientific side of their university, as regarded both the medical and the more philosophical side of science.

M.V.O. FOR DR. D. J. MACKINTOSH.—That the King delights to honour the medical profession is well known. That his favour has again fallen on Glasgow is highly gratifying to the professional brethren of Dr. Donald J. Mackintosh, who has, in the recent birthday list, received the membership of the Victorian Order. Dr. Mackintosh graduated in Glasgow in 1884, and is known to a wide circle in Glasgow and the West of Scotland as the capable Medical Superintendent of the Western Infirmary. Notwithstanding the arduous nature of his duties at the Infirmary, he took a very large share in organising the Scottish National Red Cross Hospital, and that his services have been appreciated by the authorities is shown by the honour which His Majesty has just conferred upon him. We congratulate him on his being the recipient of a well-earned recognition, and hope that he may long continue to wear his new decoration.

GLASGOW NORTHERN MEDICAL SOCIETY.—A meeting of gentlemen favourable to the formation of a Glasgow Northern Medical Society took place in the George Hotel, Buchanan Street, on Thursday, 9th October. Dr. James W. Allan occupied the chair. The Chairman explained the history of the movement and the need for a professional centre in the northern portion of the city. Dr. C. F. Spinks (of Maryhill) moved that such a Society be formed, and Dr. Hay (of Maryhill) seconded. Dr. John G. Gray was elected secretary, and Dr. James Todd, treasurer. Dr. Richmond, Dr. Edmiston, Dr. Rutherford (of Springburn), and Dr. Muir (of Possilpark) took part in the discussion.

GLASGOW NORTHERN MEDICAL SOCIETY.—The second meeting of this Society was held in the George Hotel, Buchanan Street, on the evening of the 13th November, when a draft of the

rules and constitution was submitted. Part of these rules was passed to allow the proceedings as to election of the office-bearers to take place. The following appointments were made:—*President*, Dr. James Steel Muir, Possilpark; *Vice-Presidents*, Dr. James Rutherford, Springburn, Dr. Alex. Hay, Maryhill; *Secretary*, Dr. John G. Gray; *Treasurer*, Dr. James Todd; *Reporting Secretary*, Dr. John Donald; *Seal Keeper*, Dr. John C. Edmiston; *Auditors*, Dr. Dow Waddell, Dr. John Ritchie; *Ordinary Members of Council*, Drs. J. W. Allan, T. Richmond, J. A. Wilson, A. T. Campbell, J. A. C. Macewen, J. G. Connal, J. B. Miller, J. Baird, M. Black, R. G. Inglis, W. Campbell, M. Campbell.

NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION: GLASGOW AND WEST OF SCOTLAND BRANCH.—An important public meeting was held under the auspices of this Society in the City Hall on Thursday, 6th November. Lord Inverclyde presided, and addresses were delivered by Sir Herbert Maxwell, Bart., M.P., and Professor T. Clifford Allbutt, of Cambridge. Professor Sir Hector C. Cameron moved a vote of thanks to the speakers, and the Lord Provost-Elect, Mr. Ure Primrose, proposed a vote of thanks to the chairman.

The Council of the Branch Association have experienced great difficulty in finding a suitable site for a sanatorium within a reasonable distance of Glasgow, but they have now secured an estate of 27 acres at Bellefield, near Lanark, and it may be hoped that before long the necessary money for the buildings will be provided by the public.

NEW PREPARATIONS, &c.

BYROLIN (Dr. Graf & Co., 25 Cheapside, London) is an ointment and lubricant representing cold cream and zinc ointment. It is recommended for use in obstetric work and in the nursery. It is sold in collapsible tubes.

ALL-GLASS ASEPTIC HYPODERMIC SYRINGE (London: Burroughs Wellcome & Co.).—This syringe consists of four parts, one of which, the needle, is metallic, whilst the other three—the nozzle, barrel, and piston—are of glass. All are detachable with ease, and may be rendered aseptic. The syringe is found on trial to work well, and yet the piston works within the barrel with such ease that it could scarcely be credited without actual trial that the fit is sufficiently tight for use.

The instrument is remarkably simple in structure, and possesses obvious advantages. It is sold in two sizes—one of 15, and the other of 20 minims.

CADBURY'S MILK CHOCOLATE.—We have received samples of this excellent sweetmeat, which may be commended not only as a very palatable confection, but also as a valuable food. The following is the analysis furnished:—

Fat,	.	.	.	.	.	.	30.3 per cent.
Cocoa butter,	.	.	.	.	.	.	22.6 per cent.
Milk fat,	.	.	.	.	.	.	7.7 "
Cane sugar,	.	.	.	.	.	.	42.0 "
Milk sugar,	.	.	.	.	.	.	10.9 "
Proteids or albuminoids,	.	.	.	.	.	.	10.3 "
Ash,	.	.	.	.	.	.	2.1 "
Moisture,	.	.	.	.	.	.	1.6 "
Indigestible fibre,	.	.	.	.	.	.	0.75 "
Undetermined bodies,	.	.	.	.	.	.	2.05 "
							<hr/>
							100.00 per cent.

The makers draw special attention to the partial replacement of cocoa butter and cane sugar by milk fat and milk sugar respectively, the reduction in the proportion of sugar in this chocolate as compared with plain chocolate, the large proportion of albuminoids, the minute quantity of indigestible matter and moisture, and the complete absence of colouring matters and preservatives.

FERROLEUM (London: The Ferroleum Co.).—This preparation, which is new to this country, is intended to combine the virtues of cod liver oil, iron, and phosphorus in a perfect emulsion. The following is the formula given by the makers, and different analyses bear out the accuracy of their statement:—

Olei morrhue (opt.),	.	.	.	.	.	.	̄vii.
Ferri phosphat.,	.	.	.	.	.	.	̄ii.
Phosphori,	.	.	.	.	.	.	gr.i.
Glycerini, etc., q.s.,	.	.	.	.	.	.	ad. ̄xv.

Ferroleum has the appearance of a thorough emulsion. Judged by the standard of medicines, it is highly palatable, and it is sure to be relished by children. The dose for a child is a teaspoonful, and for an adult a tablespoonful. There are obviously many diseases in which such a preparation is indicated.

REVIEWS.

Diseases of the Intestines. Vol. II. By J. C. HEMMETER, M.D.
Rebman, Limited. 1902.

THIS volume, like its predecessor, leaves nothing to be desired in its paper, printing, illustrations, and binding. It contains also a mass of information, with copious references to literature, and at times the treatment of the subject is specially interesting and informative. As behoves a special work, it contains separate chapters on various subjects, such as intestinal atrophy, abnormalities of form and position, vascular lesions of the intestines and the influence of intestinal lesions on the blood, intestinal neuroses, and a particularly good chapter on the parasites of the intestinal canal.

One naturally turns to the subject of appendicitis as a gauge of the standard of the book. The chapter devoted to this topic, and those on "Intestinal Occlusions," are the *pièce de résistance* of the volume, occupying as they do more than half of it.

The author's position with regard to appendicitis is a sound one. He dissociates himself decidedly from those who assert (Americans, we presume) that each and every case of appendicitis or perityphlitis should be operated on. As to the presence of suppuration, he places himself in line with Osler, Fitz, and Nothnagel, in desiring that "operation shall take place more frequently than hitherto" while demanding "more precise and more clear-cut indications." He has much to say of when to operate and when not to, and the reasons thereof, and draws freely from the opinions of American and European schools. All those pages on the treatment of appendicitis (after one has found them) are well worthy of perusal—especially by the Americans, who go in for wholesale operative treatment, what the author calls the "ultra-surgical treatment." They are not so much needed in this country, where, it may fairly be claimed, saner views prevail.

It is exceedingly unfortunate that the author has chosen to have two chapters on appendicitis separated by 300 pages. We have not yet discovered the reason. We would expect it to lead to repetition and confusion, and it does. In Chapter I, appendicitis is classified into (1) simple or catarrhal; (2) suppurative, with or without perforation; (3) chronic (recurrent and relapsing appendicitis). The treatment is then

partly given, and partly deferred to the resumption of the subject in a chapter with the wonderful heading, "The Clinical Aspect of Intestinal Surgery: Border-Lines between Medicine and Surgery." We there find the author classifying appendicitis into *eight* varieties, and going over the old ground again. Such a method was certain to lead to loose treatment of the subject, and there is plenty evidence of this. For instance, the author believes in "appendicular colic." We will permit him to believe so, but would implore him (almost in the name of heaven!) to cut it out of his "Border-Lines between Medicine and Surgery." Will it be believed that the particular notice of this subject is found, not in the non-surgical opening chapter of the volume, but in the later one, the "Border-Lines"? Such confusion of grouping does not, of course, deceive the reader as to the author's meaning, but it is none the less amazing. Then, in the "Border-Lines" we have again a paragraph on "simple or catarrhal appendicitis," and so on. To arrive at a succinct arrangement, and consecutive line of thought, in all the material put forward, one has simply to wade through it, referring back, referring forward, consulting the table of contents, and so forth—not, by the way, the index, by Dr. Skillman, which we cannot commend. For example, there is no mention in it of "appendicular colic." We think, by the way, that the author thinks far too much of Edebohl's method of palpating the appendix.

In Chapter III, though we have 244 pages on "Internal Occlusion," the author has chosen to relegate the larger part of the treatment to the "Border-Lines," with the natural result—there is constant repetition, also want of sequence. So much so, that this demerit overshadows many good points. We are left wondering why the author takes such pains to define and differentiate stenosis from occlusion (p. 116), when we find very soon (p. 126) that he considers them synonymous terms. Our faith in Dr. Hemmeter and his wonderful classification is shaken after this. We consider his classification cumbrous and confused, and the development of the subject suffers accordingly. The general remarks on diagnosis and the *résumé* of the subject are the best parts, and excellent. We must note that on pages 151, 164, and 176 we have a reiteration of the investigation of local meteorism—"Von Wahl's sign"—needlessly. On page 177, in emphasising the need for vaginal examination in occlusion, the author should surely have mentioned that by this means small tumours of the sigmoid flexure, cæcum, or ileo-cæcal region, can be felt. In a special treatise not one single important fact should be

omitted from its proper place. On page 184, under the "Causes of Acute Intestinal Occlusion," we have nearly three pages devoted to gall-stones, enteroliths, and foreign bodies, while again, at page 230 the same subject is taken up under "Obturations" for sixteen pages, a quite uncalled-for repetition. The whole subject would stand re-writing, re-classifying, and re-arranging, with the treatment included in its proper place (obliterating the "Border-Lines"), and reducing to about half its present length. There is much of value and interest in the paragraphs devoted to the treatment of intestinal occlusions, and especially in the indications for and against operation, and when to operate. The general therapeutics, too, are fully and fairly considered. But why does Dr. Hemmeter notice the use of metallic mercury at all, if only to sneer at the possible prescriber of it as a "quacksalber"? Supposing an operation is advised, but refused by the patient or friends—he frequently alludes to this possibility—would he never countenance the use of mercury as a last hope then? We would refer him to the *British Medical Journal* (26th April, 1902, p. 1023) for his information. His sneer annoys the more because, in the very next paragraph, he gravely records Vidal's method of giving patients a glycerin extract of animal intestine to obviate the toxæmia of obstruction. If the administration of mercury is quackery, what is this?

We have already condemned the arrangement which has led the author to separate, by many chapters, the treatment of appendicitis and occlusions from the pages devoted to the discussion of these topics generally. We must also protest against the phase of thought and teaching which, we presume, is responsible for it. Apparently in America they regard as two entirely distinct species what our author calls a "clinician" (sometimes "internal clinician") and a "surgeon." Appendicitis or occlusion (which you will) when exemplified practically in our patients—whatever it may be in theory—is one single continuous sequence of natural laws, which, by signs and symptoms, we seek to grasp, and treat, as such; and the only rational treatment is to educate one man to grasp the *whole*. Every doctor should know all about these subjects from their initiation to their conclusion, even to the varieties of operation, the indications for them, the manner and methods, the instruments used, and the after-treatment, *even although he does not take up the knife and actually operate*.

This "Border-Line" between medicine and surgery is unreal and unscientific. Nature, in disease, knows of none such. Who shall say that the "Border-Line" of to-day will be that

of to-morrow? To manufacture "internal clinicians" who shall not trespass on the knowledge of the "surgeon" is to create a useless article. We do not know that they are made, even in America, nor that Dr. Hemmeter entertains such an idea, but we do know that his language conveys it.

We could fill a page with errors in the text, and the inclusion of subjects under the wrong headings. On page 111, under a specially clearly printed "treatment" of actinomycosis, we only reach the second line when the author rambles off into a clinical "personal" experience, which, if worth recording at all, had its place on the previous page. On page 153 the head-line is "Symptoms of Chronic Occlusion," whereas the letterpress describes those of acute occlusion, and states so on page 156. This confuses, till it is detected. The grammar and construction in an American book always jar. We must object to "diffuse general perforated peritonitis" (p. 119). It is bad English to speak of "operating" a patient, and of cases that should or should not be "operated"—but it may be good American. We object, however, to substituting "narcosis" for what we would term "anæsthesia." In the world of medicine "narcosis" has come to mean one thing, and "anæsthesia" another, and there is no use confusing the meaning now. On page 381, "sign" is curiously used, the context suggesting "point" or "question" as the appropriate word. At page 387, we suppose "omentums" is a misprint. It is not the plural of "omentum."

Later on, we find "abdominal surgery was founded and developed on American soil." Dr. Hemmeter has thought it right to introduce this flourish without qualification or evidence, beyond a reference to the aborigines of North America, and the Oncanagan Indians, and a Cæsarean section by a Chippewa Indian on his wife, which we cannot dispute. "The American operators have been pioneers. They have set the pace, and others have followed." This, even if it were true, is bad taste in a scientific manual.

The chapter on intestinal neuroses is not to our liking. Here are the usual (1) motor, (2) sensory, (3) secretory. But the whole is rather confusing—colic, and enteralgia, primary, and secondary, and the rest. There is unreality about it, and not enough conciseness. The final chapter is by the "Professor of Proctology," Dr. Martin, of Cleveland College. We are here frequently referred back to Dr. Hemmeter's sections, in either volume, and many of the subjects are but summarily dealt with, and would have been better placed under other sections of the book. We do not think a student would care to get up

his "Diseases of the Rectum" from this chapter, or would have much knowledge in him after perusing it. For ourselves, we would prefer a good general surgical treatise at once, and not a mere addendum, as this is.

We close the volume with the feeling that it is in no way an advance on Volume I. There is evidence of haste in the compilation, and inequality in the treatment of the subject. We do not consider that the author has, after all, justified the issue of two such large volumes. We would deprecate any further attempts to specialise intestinal diseases out of the general text-book of medicine. We have again the distinct impression that since the author did set out to *make* this book, he had the material and the knowledge to make it very much better, had he possessed the power—or should we say, the time?

The Earth in Relation to the Preservation and Destruction of Contagia, and Other Papers on Sanitation. By G. V. POORE, M.D. London: Longmans, Green & Co. 1902.

IN the first fourteen chapters of this work Dr. Poore embodies the Milroy Lectures for 1899, and from the statistical point of view this part is of considerable value. Unfortunately, however, it deals with a subject which in all its divisions gives rise to greater diversity of opinion than any other department of medicine. Further, Dr. Poore gives a fair account of the investigations of different observers, but does not seem to have the faculty of putting the case in such a way as to enable the reader to draw conclusions for future guidance, although one naturally turns to Chapter XIV ("Conclusions") for this purpose.

The chapter on the Maidstone epidemic of enteric fever in 1897 gives a very full account, and a critical analysis, of the incidence of the disease as connected with the water supply from the various springs.

Chapter VIII, dealing with immunity, is exceedingly interesting, and Dr. Poore's observations show a comprehension of this problem not often seen in the discursive articles on the subject in many of the text-books. As the author properly says (page 70), "Whether we succumb to an infective disease or not probably depends in great measure upon the dose of poison which we receive."

No doubt the disposal of sewage might be made so as to be productive to the soil, but in the large cities of this country the problem is a very complicated one, requiring as it does the

intelligent co-operation of the inhabitants themselves to ensure good results. Exception might be taken to the last paragraph on page 150; it is not in accordance with modern ideas to say that it is quite reasonable to allow the filthy to "stew in their own gravy."

The last chapter in the book, dealing with "Dietetic Problems," shows the author at his best, and will be of the greatest service to everyone who recognises the enormous importance of the food problem in its relation to the public health. This chapter is well worth such amplification as would entitle it to the distinction of separate covers.

Tuberculosis as a Disease of the Masses, and How to Combat It. Prize Essay by S. A. KNOFF, M.D. Adapted for use in England by J. M. BARBOUR, M.B. London: Rebman, Limited. 1902.

THE "International Congress for the Study of the Best Way to Combat Tuberculosis as a Disease of the Masses," convened at Berlin in 1899, offered a prize of 4,000 marks for the best popular essay on the subject. The appointed judges finally decided that the essay by Dr. Knopf so much surpassed all the others in excellence that it should be awarded the Congress prize. Perhaps the judges were compelled to award the prize as the result of the competition—eighty-one essays were sent in—and irrespective of the actual merit shown; at least it is to be hoped so, as not a single word of praise can be given to the production. The language is loose and slipshod throughout, the interjection "alas" appears with monotonous regularity on every other page or so, the recommendations are Utopian and impracticable, the conclusions are lame and impotent, and there is not one new idea or even view in the whole essay. With regard to the figures: Fig. 1 is wrongly described; Fig. 2 might well puzzle an expert, apart from a layman; while Figs. 19, 20, and 23 are out of place in such an essay, as they convey no information germane to the subject. A few extracts from the essay will best indicate the manner in which the subject has been treated. "Whenever one is not reasonably certain that the meat he eats has been carefully inspected and declared free from disease germs, it should be very thoroughly cooked" (p. 26). "If one has been unfortunate enough to receive an injury, and tuberculous inoculation is feared, the best thing to do is to let the wound bleed freely, wash it thoroughly with water that has been

boiled, with a 5 per cent solution of carbolic acid or with pure alcohol, dress the wound with a clean rag dipped in any of these liquids, and seek as soon as possible the advice of the physician" (p. 27). "Fig. 12 shows the situation of the organs in chest and abdomen in a normal thorax. Fig. 13 shows lungs, heart, and intestines as they appear in a thorax constricted by wearing a tightly-laced corset for a number of years" (p. 31). To still further confuse matters to the layman, neither Fig. 12 nor Fig. 13 shows the heart at all.

This essay adds nothing of value to the already profuse literature on the subject.

Eye, Ear, Nose, and Throat: A Manual for Students and Practitioners. By WILLIAM LINCOLN BALLENGER and A. G. WIPPERM, M.D. London: Henry Kimpton. 1901.

THIS book may be recommended to those who desire to have a *multum in parvo*. It lays no claim to scientific exposition, but does undoubtedly give a fairly good orthodox practical exposition of the subjects named in the title. There are not a few omissions, however, even in reference to practical matters. Thus, there is no record of the best methods of local anæsthesia. Nor is there any reference to the method of treating suppurating ears by means of gauze drainage. Some inelegancies and inaccuracies in the composition are very glaring. Thus, the writer speaks of the *adaditus*, a term which has no meaning to many, and when he explains it by stating that *aditus* means "attic," it is clear that his knowledge of the humanities is not what it should be. Again, "pathologic" is not an elegant word.

Some Thoughts on the Principles of the Local Treatment in Diseases of the Upper Air-Passages. By SIR FELIX SEMON, M.D., F.R.C.P. London: Macmillan & Co. 1902.

THIS little volume contains two lectures delivered in October, 1901, at the Medical Graduates' College and Polyclinic, and afterwards published in the *British Medical Journal*. Dealing with various well-known abuses, and written in a trenchant style, they attracted widespread attention, and led to a heated discussion.

The author protests against "the lust of operation," "the

morbid readiness to discover disease," the teaching that "every abnormality should be set right, lest it should ultimately cause mischief of some kind," and exposes to ridicule various vagaries practised in dishonesty or ignorance by the "radical localist." To make reproof effective it was necessary that he should express his opinions strongly, and in so doing he may appear to some to have overstepped the mark in places. If he has, he may well be forgiven. No one can fail to admire this manly condemnation of humbug, or to profit by the doctrines taught therein.

Les Filatures de Lin. By DR. D. GLIBERT, Brussels.
1902.

THIS work is a description of an exhaustive enquiry into the conditions existing in the Belgian flax-spinning mills, viewed from a hygienic aspect. Dr. Glibert is to be congratulated on having done his work well, the whole investigation showing the most careful and thorough manner in which it has been performed throughout. Of special interest are the sections dealing with the diseases prevailing among the workers in the mills, the infantile mortality in relation to the female workers, and the hygiene of the workrooms themselves. A number of photographic reproductions and a few diagrams facilitate the references in the text. In the last few pages the conclusions of the investigation are succinctly pointed out, and the remedies, which are in most cases sufficiently obvious, indicated.

As an amplification of a section of Arlidge's well-known work in our own language, this monograph has considerable value, although the problems presented are so complex that State interference with the existing conditions must always be guarded and almost tentative.

Medical Lectures and Aphorisms. By SAMUEL GEE, M.D.,
F.R.C.P. London: Smith, Elder & Co. 1902.

ONE naturally judges Dr. Gee by a very high standard, and in this volume he is not found wanting. The book, in size and external appearance, is very like the delightful little monograph on *Auscultation and Percussion*. In the style also, including the attention paid to the historical aspect of the subject,

and to etymology, and perhaps, too, in the *ex cathedra* manner, there is a good deal to recall the earlier volume.

The present work contains fifteen chapters on the following subjects:—I, The history of a case of cerebral hæmorrhage; II, The meaning of the words coma and apoplexy; III, Large heads in children; IV, Aphasia; V, The meaning of the word delirium; VI, Nervous atrophy (*atrophia vel anorexia nervosa*); VII, Irritable spine and spinal myalgia; VIII, The causes and forms of bronchitis; IX, The nature of pulmonary emphysema; X, The nature of asthma; XI, Enlarged spleen in children; XII, Tubercular peritonitis; XIII, The signs of acute peritoneal diseases; XIV, Sects in medicine; and XV, Clinical aphorisms. The 271 aphorisms collected in Dr. Gee's wards by Dr. Thomas J. Horder deal with a variety of subjects, and are arranged in groups correspondingly.

It is better not to attempt to read the book through at one sitting. One or at most two chapters should be studied at a time leisurely, but in such a way as to master their subjects; and the reader who thus, in the course of a week or two, knows thoroughly all that the book contains, may expect to profit greatly thereby.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Ova of the Worm, *Euspongius Gigas* in the Urine.—At a meeting of the Berlin Medical Society, held on 16th July last, Dr. Sturz showed a male patient who came to him on account of his urine being turbid. He had recently come from Australia. The urine was chylous, and contained cholestearin, lecithin, albumin, and white blood corpuscles. Dr. Sturz thought first of filaria, and examined the urine hour after hour, but without success. He next examined small blood-clots which escaped at intervals from the bladder, but without finding any ova of this nematode or the parasite itself.

The urine from each kidney was withdrawn by catheterising the ureters, and it was found that the urine from the right was quite clear, while that from the left was chylous. After a lengthened examination, the ova of *euspongius gigas* were discovered in the latter. This parasite has hitherto not been described as occurring in the living human subject. It is a nematode, and may measure as much as 1 m. in length. It may cause rupture of the pelvis of the kidney.

When the patient lies on his back or right side the urine passed is clear;

when on his left side or when standing it is chylous. Examination of the kidneys with respect to function showed each to be satisfactory. Left-sided nephrotomy was performed. Besides the ova of this parasite there were others, which have, however, not as yet been identified.—(*Deutsche Medizinische Zeitung*, 28th July, 1902, No. 60.)

On the Diagnosis of Hour-glass Contraction of the Stomach.—In a paper in the *Deutsche Arch. f. klin. Med.*, 73 Bd., S. 152 ff., Dr. C. A. Ewald indicates the various signs by which this condition may be diagnosed, and gives two supplementary methods of diagnosis recently introduced, and discusses their value. The two more recent methods are—

1. Transillumination by means of a minute electric lamp introduced into the stomach.

2. The use of rubber balloons, which are inflated on being introduced.

The lamp, he says, will not pass through the narrow opening into the dilated pyloric part, and illuminates the cardiac portion only, even if it happens to lie behind the ribs. In his experience the lamp has never passed the narrow opening into the pyloric portion; also in no case of hour-glass contraction can the lamp be readily moved about when fully introduced, as in the normal condition or in simple dilatation.

As regards the second of these methods, which is associated with the names of Turck, of Chicago, and Hemmeter, of Baltimore, he states that the balloon, when inflated, remains in the first chamber, and, as in the case of the lamp, the range of movement within the organ is restricted. After mentioning that gastric ulcer is the most frequent cause of this condition, the author proceeds to give illustrative cases.

In one patient, a young woman aged 36, the diagnosis of an old ulcer situated on the lesser curvature, with hour-glass contraction, was made, which was confirmed at subsequent operation.

In a second case a double ulcer, with hour-glass contraction, was diagnosed; one part of the ulcer was found to present carcinomatous characters. The complete diagnosis was not made during life. Death took place from hæmorrhage. The base of the ulcer, which was the size of a five mark piece, was formed by the tail of the pancreas. The pancreatic artery was exposed and eroded.

In a third case the diagnosis was that of "malignant new growth, probably hour-glass contraction." It was not, however, confirmed at operation. The patient, a woman, 52 years of age, had attempted to commit suicide two years before. The lesion was found to be a small carcinomatous tumour on the lesser curvature. There was no typical hour-glass contraction, although the behaviour of the inflated balloon seemed to point to this. Dr. Ewald refrained from introducing the lamp, inasmuch as blood was found in the contents of the stomach each time after the passing of the tube. This shows that one of the signs referred to, taken by itself, is insufficient to establish a diagnosis.—(*Deutsche Medizinische Zeitung*, 4th September, No. 71.)

Bathycardia.—Professor Martin Mendelsohn gives the result of his observations in 11 cases in which the heart was deeply situated, and was not unduly movable, in an article which appeared in the *v. Leyden-Festschr.*, Bd. II. All were cases of simple bathycardia. He relates those which were fraught with most interest *in extenso*. The essential point is that the heart itself was normal. The symptoms complained of were referable to the deep position of the organ, and not to any affection of the heart. One might think at first that he had to deal with neurasthenia or an affection of the stomach, until he recognised the abnormal situation of the heart. The following were the chief points observed:—

The low level of the upper border of the cardiac area.

The apex impulse, when present, was much depressed.

The cardiac sounds as heard at the apex were pure, and heard with usual distinctness for a considerable distance downwards.

The symptoms in the large majority of the cases were paroxysmal, and were manifestly associated with the ingestion of food or other influence acting in a mechanical way. They mostly assumed the form of a pseudo angina pectoris, with palpitation, a feeling of compression of the chest, dyspnoea, and intermittent pulse.

When the heart is deeply placed, a relatively slight distension of the stomach or colon is sufficient to elevate the diaphragm and exert direct mechanical pressure on the heart, or cause excitation of that organ reflexly by irritation of the pericardium.

"The deep position of the heart," says the writer, "is to be ascribed to atony of the walls of the great vessels, and especially of the arteries." It is significant that Mendelsohn's patients were men of more mature years. It is to be noted, also, that Skoda found that the situation of the heart was higher in youth than in later life.—(*Deutsche Medicinal-Zeitung*, 24th July, No. 59.)

SURGERY.

By ARCH. YOUNG, M.B., B.Sc. AND JOHN PATRICK, M.A., M.B.

Osteotomy and Osteotomy of Femur in Vicious Ankyloses of the Hip, and in Certain Malunited Fractures of the Femur.

—In the *Revue de Chirurgie* (10th October) there is a paper by Dr. Eugène Vincent (chirurgien en chef de l'hospice de la Charité de Lyon) on the above subject. Dr. Vincent, as a noted member of the school of conservative and orthopaedic surgery at Lyons, of which the late Professor Ollier is perhaps the best known exponent, writes with no little authority on such a subject—authority based on wide experience and able appreciation of all the bearings of his subject.

Dr. Vincent divides the subject as indicated in the title, and treats the two parts quite separately.

In the first chapter, he shows that the deformity of a vicious ankylosis, following cure of a diseased hip-joint, may be corrected without danger, and in a permanent fashion.

The possible methods that may be followed are—

1. Those involving resection or excision of the joint.
2. Those involving osteotomy with, or without, resection of bone—i.e., osteotomy or osteotomy.

1. *The indications for and against resection of the joint in cases of ankylosis of the hip* are not very numerous. If there is active disease with the ankylosis, resection may be carried out with the object rather of combating intra-osseous inflammation than of dealing with the ankylosed condition. In such a case, forcible reduction, manual or by means of an osteoclast, might result in grave accident. Ollier has, in this way, lost a patient from pyæmia. Whether the intra- or extra-osseous inflammation be of staphylococcic origin, it is better to make a typical resection than to trust to a violent attempt at reduction.

Should resection be rejected, choice must be made between simple expectant treatment, immobilisation, or osteotomy at some level removed from the inflamed articulation.

Ollier, it is noted, was not partial to articular resection of the hip for ankylosis as a routine line of treatment. He had little confidence in the production of a movable joint, especially where the ankylosis had succeeded a suppurative process and there was much atrophy. He preferred osteotomy below the head and trochanter.

Total resection of the head of the femur risks the production of a badly fixed limb, awkward gait, and incapacity for prolonged walking.

Ollier, from his personal experience, preferred simple osteotomy of the femur, as an operation of choice, to articular resection, at least from the point of view of function, whatever the nature of the arthritis (*coxo-femorale*), which gave rise to the ankylosis. This is clear, and almost formal as regards *unilateral ankylosis*. In the case of *bilateral ankylosis* the rule must be modified. The surgeon should endeavour to get correction of the deformity, by firm ankylosis in good position on one side, and by a movable nearthrosis on the other, either by carrying out double resection of the hip, or by a typical resection on one side and an osteotomy below the femoral neck on the other (*ostéotomie sous-cervicale*). The mobility on one side, in this class of case, can be accomplished at will by articular resection or osteotomy, by directing the post-operative treatment accordingly.

If one wishes the movement at the level of the hip, one must adopt "*résection sous-périostée interrompue*"; i.e., one must remove the periosteum from the neck and the fibrous peri-articular bundles of tissue, and begin movement early, while keeping up constant extension. In a woman not exposed to much laborious work or fatigue and able to rest much in the sitting posture, a mobile new joint, even bilateral, might quite well be sought; but, in a man, such a movable new joint would run the risk of resulting in exaggerated shortening of the limb and functional disability, on account of the constant tendency to upward displacement of the femur under the weight of the body in the erect position. The occurrence of this upward displacement would not be risked by having the mobility at the level of a femoral osteotomy (*sous-cervicale* or *sous-trochanterique*), especially if the pseudarthrosis were at all firm, because the lower segment would abut against the upper, which remains immovably fixed to the pelvis.

2. *Indications for osteotomy or osteotomy*.—Osteotomy is clearly indicated in all cases where the ankylosis follows hip-joint tuberculosis, or tuberculosis in the vicinity of the hip, even in the absence of any inflammatory process, painful or suppurative. As a rule, in such cases, the osteotomy ought to be carried out as far as possible from the seat of the osteo-arthritic process.

Violent reduction, osteoclasty, and even typical resection may be, and have been, followed by grave and often fatal results, by rousing afresh a process already dying out, and requiring for its complete extinction only that complete rest that will permit of the free phagocytic action of the tissue cells and leucocytes.

For *unilateral ankylosis* it is the rule; that is not strictly so *where the condition is bilateral*. Forgetful of the risk of resuscitating a tubercular process, or having in view only ankyloses of non-tubercular origin, the older surgeons proposed resection on one side, osteotomy on the other, so as to obtain mobility on one side, solid ankylosis in an improved condition on the other.

Ollier first of all tried a double resection in bilateral ankylosis, but then adopted the rule just mentioned; later, he reached an even more conservative position, and his rule was more absolute still—never to touch the hip-joint in such cases, but to carry out the corrective and orthopaedic process on the femur, so as to obtain either rectilineal fixation or a pseudarthrosis.

Vincent believes that, in spite of this view, there is still room for difference of opinion on this point, and that the most suitable line of treatment in such conditions will depend not merely on the cases themselves, but also on the aptitude, skill, and judgment of the individual surgeon.

After sketching the chief methods of femoral osteotomy for ankylosis of the hip, beginning with Rhea Barton's proposal, in 1826, to cut through the trochanter in a transverse direction, and following the history of its development in the hands of Keorney, Volkmann, Langenbeck, and Adams, Dr. Vincent outlines a little more fully Ollier's special method.

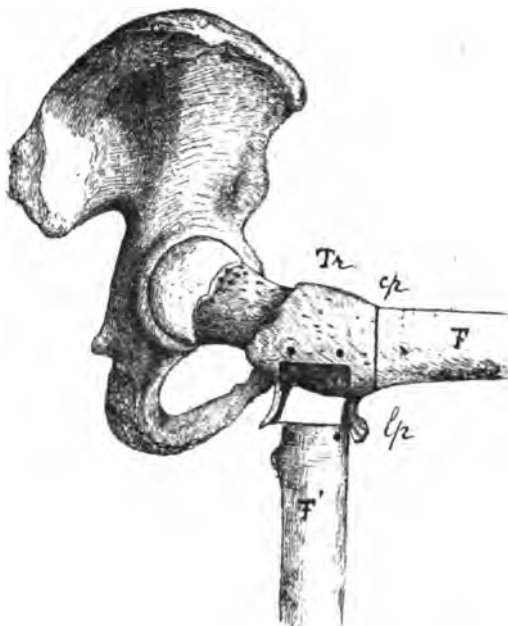
Ollier, in order to ensure the establishment of a sub-cervical pseudarthrosis with as free movement as possible, adopted the following means:—

1. A portion of bone, to the thickness of 2 centimetres at least, was excised, osseous tissue and periosteum together.

2. The cut surfaces of the bone were kept apart by applying an extension weight of 2 to 8 kilogrammes.

3. The segments of the pseudarthrosis were submitted to early and methodical movement.

After a reference to the efforts of surgeons to obtain a mobile femoral joint, a pseudarthrosis, by various modifications of the surfaces of section, by cutting in an arched, vaulted, or curved manner, Vincent arrives definitely at the



E. VINCENT'S PROCESS OF OSTEOTOMY FOR CORRECTION OF VICIOUS ANKYLOSIS OF THE HIP.

Tr, Great trochanter; *F*, diaphysis of femur; *F'*, the same diaphysis, horizontal changed to vertical; after section (black line) it has been carried back and placed as a *tenon* in a *mortise* cut on the posterior aspect of the great trochanter; *cp*, collar of periosteum detached from the femoral diaphysis to cover over the surface of section of the bone when it has been carried back (dotted line); *lp*, layers of periosteum raised from the posterior aspect of the great trochanter, at the point where it is proposed to cut the mortise; this will cover over the extremity of the femur which has been denuded of a collar of periosteum, as we have just seen, so as to cover the sub-trochanteric surface of section of the proximal segment; these periosteal flaps becoming ossified, will consolidate the union of tenon and mortise in the joint.

(Figure from a sketch by Dr. E. Loison.)

conclusion that, after all, fixation, even in a better position, is of little value unless that fixation is firm, solid and reliable.

He proceeds to sketch the steps of an operation devised by himself with a view to the establishment of that firm fixation of the segments of the femur.

Vincent makes his section of the femur below the great trochanter (*section sous-trochanterienne*), and fits the upper end of the femoral shaft into a mortise cut out on the posterior aspect of the great trochanter.

The steps of Vincent's operation will be readily followed by attention to the

accompanying figure (p. 461), which we are, by the courtesy of the author, enabled to reproduce here. It is from Fig. 7 in the author's article in the *Revue*.

It is only necessary to say a few words as to the operation in supplement to the figure and its description.

1. *The cutaneous incision* is longitudinal, on external aspect of femur, beginning at the extreme tip of trochanter and extending to about 12 cm., and carried directly to the bone; the lips of the wound are then separated.

2. *Reflection of periosteum*—as indicated in illustration (*cp* and *lp*).

3. *Creation, by means of chisel and gouge, of a niche (mortise) on posterior aspect of trochanter*, having the diameter of femur and a depth of about one centimetre.

4. *Transverse section of the femur* between the two trochanters, or at level of the lesser trochanter; this is carried out by circular saw or Macewen's osteotome.

5. *Carrying back of the femoral diaphysis and implantation of it in the mortise* behind the trochanter. Muscular rigidity may give rise to some difficulty, and rough measures must not be resorted to. Damage to great vessels may be easily done if care is not taken. The collar of periosteum (dotted line in illustration) is drawn over the edges of the cut section below trochanter, and protects the muscles and vessels in front from damage. If tension is too great, these edges can be still further bevelled off.

6. *Ossious suture* (wiring, pegging, &c.), and covering over of joint with periosteum (*lp*).

The further treatment consists in attention to drainage, by counter-opening at the most dependent part, and suture of the soft parts; everything, of course, to be done with strict aseptic precautions. The parts are immobilised by a firm plaster of Paris apparatus passing round thigh, pelvis, and waist, the limb being fully extended and slightly abducted.

These are the essentials of Vincent's method, and it only remains to note that perhaps the most troublesome factor one is likely to encounter is a persistent lordosis; but, no matter what method is adopted, this may, of course, give trouble, and is liable to persist.

Of the second portion of Dr. Vincent's paper, it need only be said that it deals with a method of fitting together, by coaptation of carefully cut edges, the extremities of femoral fragments in mal-united fractures where operative interference is necessitated for correction of much over-riding.—A. Y.

Another Use of Gersuny's Paraffin Method of Rectifying Deformities.—R. Burmeister (*Centralblatt*, No. 39, 27th September, 1902) suggests that, where the testicle has been removed, an artificial testicle of paraffin may be substituted. He quotes the case of a young naval officer, whose left testicle he removed for tubercular disease in June of this year. The castration was performed in the ordinary way, but, before closing the scrotal wound, he placed within it a testicle made of paraffin—previously sterilised by heat and corrosive sublimate solution. The wound healed well, as if there had been no foreign body present at all. The patient returned to duty in three weeks. The author gravely adds that the "cosmetic result" was very satisfactory. In appearance, the only fault was that the artificial testis did not hang quite so freely in the scrotum as the other, as it probably was fixed by cicatricial tissue. By palpation, only the skilled fingers of a surgeon could detect any difference between the natural and the artificial.—J. P.

On the Serum Treatment of Tetanus.—W. Maczkowski (*Centralblatt für Chirurgie*, No. 37, 13th September, 1902), on the basis of a number of personal observations, and of collected cases of serum treatment of tetanus published in Polish medical literature, arrives at the following conclusions:—

1. The mortality from tetanus has been markedly diminished by serum treatment. Specially evident is the influence of the serum in protracted cases of the disease.

2. The longer the period of incubation, the more favourable is the prognosis.

3. Large doses of the serum should be given quickly, and often, after the appearance of the disease.

4. As a prophylactic in foul wounds, its value is undoubted.

5. The intracerebral and intravenous methods of administration have no advantage over the subcutaneous.—J. P.

NERVOUS DISEASES AND INSANITY.

BY DR. R. S. STEWART.

Epithelial Papilloma of the Red Nucleus. By Raymond and Cestan (*Archives de Neurologie*, August, 1902).—This is the case of a man who presented very markedly the syndrome of Weber, in the sense that the motor troubles of the limbs on the right side, associated with paralysis of the third left cranial nerve, consisted not in true motor paralysis but in inco-ordination. These were accompanied by generalised exaggeration of the reflexes, and affected the side opposite to that of the peduncular lesion. At the autopsy there was found a primary endothelioma of epithelial type, arising from the peduncular pia mater, destroying the whole of the left red nucleus and the inner half only of the right, and leaving entirely unaffected the crusta of both peduncles. The conclusion deduced is that the motor trouble of the limbs was determined by the lesion of the direct cerebral tract, interrupted in this case at the level of the red nucleus.

General Paralysis in Moscow. By Soukhanoff and Gannouchkine (*Archives de Neurologie*, September, 1902).—The percentage proportion of general paralytics who presented themselves at the psychiatric clinic of this city in the twelve years ending 1900 was 17·23 for males and 6 for females. The latter years of this period show not only an absolute increase of this disease, but a markedly disproportionate increase among females, the relation of males to females being, in the first four years, 7:1, while in the last it is 5:1, the proportion of all forms of insanity between the two sexes showing at the same time little variation. The greatest number of general paralytics occurs in men in the age period 36 to 40, and in women in the period 31 to 35, and the number of females in the earlier and more advanced age periods is much greater than in the case of males. Hereditary psychopathic and neuropathic predisposition is found to be as grave an etiological factor in this disease as in other forms of mental trouble. The previous existence of syphilis is considered undoubted or probable in at least 75 per cent. and the period intervening between the time of inoculation and the supervention of the general paralysis varied in the greatest proportion of cases from six to fifteen years. The condition of mind which is of commonest occurrence in both sexes is that of dementia, and this in the later periods is found to be becoming increasingly prevalent. In about 17 per cent the cases were of the tabetic type.

The Fundus Oculi in General Paralysis. By Keraval and Raviart (*Archives de Neurologie*, October, 1902).—Of 51 cases examined, 42 presented lesions of the fundus, and it was only in those in which there was a remission of the disease that these were absent. In 7 advanced cases white atrophy of the papilla existed, and grey atrophy and posterior sclerochoroiditis each in 1 case. Other conditions observed were a pale, "washed," and "soft" aspect of the papilla, which in 22 cases constituted the preliminary stage of papillary atrophy. Microscopic examination of 2 cases revealed alteration of the nerve cell layer, characterised by nuclear swelling, protoplasmic disintegration going on to destruction of a certain number of these elements, alterations quite similar to those occurring in the cortical nerve cells. The papilla, whose

nerve fibres were atrophied in one case, was invaded by proliferating elements of the connective tissue or neuroglia. The central artery and vein presented a variable degree of thickening of the external tunic. The optic nerve was the seat of interstitial proliferation, with considerable augmentation of the number of neuroglia cells, thickening of the connective tissue trabeculae, and proliferation of the connective tissue cells of the pial sheath.

Corneal Depression in Grave Encephalopathic States. By Pailhas (*Archives de Neurologie*, September, 1902).—From the observation of a number of cases this writer draws the following conclusions. There is an ocular alteration characterised by the simple depression of a more or less limited point of the cornea, without appreciable anatomical lesions, but, in relation to the cephalic troubles, always grave. This depression is essentially unstable, mobile, arising, disappearing, and being displaced rapidly over different points of the cornea. Although it has been produced in one case in less than an hour after a violent cranial traumatism, it occurs usually only during the period of the grave depression of the psychoses, acute delirium, and encephalitis. It is necessary to distinguish this essentially superficial alteration of the cornea from the neuro-paralytic keratitis which, characterised by profound dystrophic lesions, appears more directly in relation with the trophic centres constituted by the Gasserian ganglion. In all cases it appears that certain lesions of the cerebral centres, whatever the mode of origin and intensity, exercise an undoubted morbid influence on the cornea. The prognosis of those affections which are associated with this corneal depression must be considerably aggravated, whether from the point of view of the danger of death in cases of encephalitis, acute delirium and traumatism, or from the point of view of incurability or possibility of subsequent dementia in grave psychopathic conditions.

The Relationship of Enteric Fever to Mental Alienation. By Paris (*Le Progrès Médical*, 18th October, 1902).—Febrile delirium, according to this observer, is never grafted upon the grand frank forms of mental alienation. The knowledge of this sort of antagonism between typhoid fever and the depressive or exalted delusional insanities permits us to appreciate the nature of the intellectual troubles which sometimes remain after an attack in a formerly normal individual. These are habitually characterised by intellectual obnubilation, amnesia, diminution of cerebral activity, a penury of ideas representing a cellular degeneration, probably fatty, of the superior nervous system rather than by the symptoms of mental alienation proper, which does not begin by a mental inertia analogous to that which sometimes follows typhoid. From the social and hereditary point of view it is important to regard the demential states consecutive to typhoid as similar to the mental debility of certain hemiplegics and syphilitics, and not as evidence of insanity.

Pathogenesis of Diabetic Insanity. By Dawson (*Journal of Mental Science*, October, 1902).—The presence of the glucose in the blood is regarded as bringing about a chronic reduction of the oxygen supply, first in the pulmonary capillaries and afterwards in the course of the circulation through the brain and elsewhere, and possibly also in the tissues. From which it results that sensible diminution takes place in the amount of oxygen available for use by the tissue cells, and, as the metabolism of the cortical cells is already very low, they feel this deprivation more than those of other organs. This, aided by general malnutrition and other influences, is looked upon as the cause of the characteristic insanity of diabetes.

Sulphonal Poisoning. By Alexander (*Journal of Mental Science*, October, 1902).—The administration of 30-gr. doses of this drug daily for a week was followed twenty-four hours after the last dose by the occurrence of vomiting, with cold, clammy skin, subnormal temperature and low arterial

tension, and the presence of hæmatoporphyrin in the urine. Then followed flaccid paralysis, appearing first in the legs, and spreading rapidly until it became general; the formation of bullæ, abolition of the reflexes, and involuntary evacuation of urine and fæces, dysphagia and failure of respiration, death ensuing on the fifth day after the first appearance of toxic symptoms. Inasmuch as, in nine out of ten cases in which these symptoms were observed, the menstrual epoch was imminent or present, a warning is given as to caution in the use of this drug in women at this period.

PATHOLOGY.

By A. R. FERGUSON, M.D.

Post-Operative Leucocytosis and other Blood Conditions. Herbert Maxon King (*Trans. Chicago Path. Society*, vol. v, No. 6, p. 103).—The object of the observations made was to establish a standard of leucocytosis in non-septic post-operative wound repair, any departure from which would indicate sepsis.

Quantitative examination of the blood was made from six to twenty-four hours before operation. A leucocyte count was made six hours after completion of operation.

A second quantitative examination similar to the first was made twenty-four to thirty hours after operation. A leucocyte count was made daily thereafter till all danger of sepsis had passed, and the number of leucocytes had fallen to practically a normal number. The blood in all cases was peripheral, and obtained, without application of any pressure, by puncture of finger tip.

In the first series of 10 cases all were abdominal sections, with one exception—an amputation of the breast for malignant disease. One of the abdominal sections was also for malignant disease. Observations were made in 17 cases, the patients being, with one exception, adult females. The following general conclusions were arrived at:—

1. An increase of 5,000 to 10,000 leucocytes per cubic mm., following operation in from six to thirty-six or even forty-eight hours, is a normal post-operative condition, provided it be not sustained.

2. Probably the maximum leucocytosis in the majority of cases occurs within the first twelve hours after operation, and is very transient.

3. The leucocytosis in the normal reparative process bears but slight relation to the pulse and temperature.

4. A degree of leucocytosis exceeding the normal standard after operation by 10,000 and upwards per c.mm., and sustained for some time, may be looked on with suspicion.

As a result of differential enumerations of the leucocytes in the cases examined, a marked increase in the polymorphonuclear neutrophiles was in all cases established. Transitional forms of these cells were also found in increased numbers. Large lymphocytes were also increased in actual number per c.mm. in most of the cases.

The number of red corpuscles was found in the examinations made shortly after operation to be increased. This was the case even where, during operation, a considerable quantity of blood had been lost. The number speedily fell to within normal limits, however. The observer therefore concluded that the apparent increase is either relative and due to a temporary abstraction of the fluid elements from the blood, or is merely a state of matters peculiar to the peripheral blood, and of quite transient character.

Leucocytosis in Hanot's Disease. Kirikow and Korobkow (*Russ. Archiv. f. Path., Klin. Med., und Bakteriologie*, St. Petersburg, 1902).—Hanot
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and Meunier regard hyperleucocytosis as a characteristic of hypertrophic cirrhosis of the liver, and that this distinguished it from other forms of hepatic cirrhosis. The above authors put this to the proof by making systematic observations on six cases of Hanot's disease. They came to the conclusion that in the majority of cases leucopenia was the usual condition, that a normal leucocyte range was not uncommon, and that an increase in the number of leucocytes was due to the setting in of complications (tuberculosis in one of their cases).

A Rare Blood Condition (Myelocythæmia) in two Cases of Plague. Andrea Linno (*Centrabl. f. allgem. Path. u. path. Anat.*, 1902, No. 10).—In both cases of bubonic plague examined, the quantitative changes in the blood corpuscles were tolerably significant. In the first case the red corpuscles amounted to only 3,800,000, whilst the mononuclear white corpuscles numbered 2,000 and the polynuclear 4,000. In the second case 3,600,000 red corpuscles were found; mononuclear white corpuscles, 17,000; polynuclear white corpuscles, 21,000. In both cases a strikingly large number of the mononucleated white corpuscles were lymphocytes. Moreover, the author found myelocyte eosinophiles to the extent of 1·5 per cent of all leucocytes present. During the progress of convalescence the numbers of myelocytes became markedly diminished, and the polynuclear eosinophile cells underwent a distinct increase.

The author regards it as noteworthy that a similar state of matters is not found in the blood of persons suffering from the more usual infective diseases of lymphatic glands, and anticipates that this condition of the blood in plague may yet be found to have a diagnostic significance.

Contribution to the Differential Diagnosis between true Tubercle Bacilli and the Two Acid-Fast Bacilli—(a) Timothy Grass Bacillus (Gorbersdorf), and (b) the "Butter Bacillus" (Rabinowitsch). Johannes Kayser (*Inaug. Dissert.*, Rostock, 1902).—The points of similarity between these organisms are comparatively numerous. They possess in common an "acid-resisting" character when suitably stained; their form, also, is not dissimilar, the shorter varieties of the tubercle bacillus being easily confused with the shorter organisms from a fresh culture of the Timothy grass bacillus, whilst, on the other hand, the longer well-developed tubercle bacilli closely correspond with Rabinowitsch's bacillus. All three present similar features of growth on certain media (differences being more pronounced in the earlier stages of culture); and, finally, the pathological changes to which they give rise in the animal body are very closely comparable. The comparison of glycerine-agar cultures of the various organisms suffices to distinguish them most satisfactorily. Thus, Timothy grass bacillus and B. Rabinowitsch show a vigorous growth on this medium in forty-eight hours, whilst B. tuberculosis only shews definite growth towards the end of the second week of incubation. The appearances of cultures also differ widely, as the following shows:—

Timothy grass bacillus—a thick, shining, moist growth of yellowish colour.

B. Rabinowitsch—a greyish-white growth, gradually assuming a dry scaly surface, and passing from light yellow to reddish in colour.

B. tuberculosis—very fine colonies of greyish-white colour, generally confluent over some part of the medium, and in such situations soon acquiring a dry "wrinkled-leaf" surface.

In animals, the two above organisms, which in several respects resemble that of tubercle, produce an acute, but generally not fatal infection, the inoculated animals regaining a normal condition in three to four weeks.

In animals inoculated with B. Rabinowitsch, circumscribed infiltrations and even tubercle-like nodules are found. In these latter, however, giant cells are never found, and true caseation does not occur. On the other hand, the centres of such nodules frequently undergo softening, and the characteristic bacillus is found in the degenerated material.

DENTAL SCIENCE.

By W. D. ANDERSON, F.F.P.S.G.

Some Effects of the Refinement of Foods. By J. Sim Wallace, M.D. (*British Journal of Dental Science*).—The author commences by stating that the different dietetic theories of caries all have one point in common, viz., that the modern processes of preparing and refining foods are to be held accountable. He thinks it well we should consider whether the elimination of coarse and fibrous elements, while being harmful to the teeth, is really a gain to the stomach and general economy.

Treating the subject first from a biological point, and assuming that acquired characters are not transmitted, he concludes that present-day man should have as good a digestive apparatus as his primitive ancestor. Pointing out that, while the foods of the past were practically the same as now before the refining processes are used, yet dental caries and dyspepsia were practically unknown, he gives as his belief that these two diseases are due to avoidable indiscretions in diet.

Dealing with the foods from the physiological standpoint, he lays stress on the point that a certain amount of *indigestible, innutritious, and unabsorbable* matter should be included in our dietary. The uses of such in stimulating the peristaltic action of the stomach and bowels is dwelt upon, and he considers that many cases of chronic dyspepsia would be prevented if a coarse and fibrous diet were regularly used.

The different foods are then taken up, and the conclusion come to that, in the refinement as at present practised, there is no real gain to the general economy. Carbohydrates are most fully dealt with, and the danger of amylaceous dyspepsia from the stomach being filled with undigested starch is pointed out. The exclusion of cellulose the author looks upon as the cause of this, as the food is easily swallowed without thorough mastication and salivation. Looking at the stomach and bowels as muscular organs, he maintains that they need regular exercise, and such is most easily given by a diet containing unabsorbable, innutritious, and indigestible matter, of course excluding matter of an obviously irritating character.

The author then states that he fully admits the use of specially refined and predigested foods in cases of general or localised debility of the digestive apparatus, but thinks they should be confined to such.

Dealing with food for children up to the advent of the incisors, milk alone should be given. After that, it should be supplemented with vegetable juices (orange leths and sugar cane being mentioned as examples), which the child can gnaw and suck, the fibre being removed from the mouth after the juice is extracted. These juices he considers of benefit to the animal economy, and the continual gnawing and sucking of such will promote the growth and functional development of the salivary glands. After the advent of the molars, solid food should be given.

He sums this question up by posing the following points, which he thinks should be attended to as guides in feeding of children.

1. A knowledge of the natural foodstuffs which have in past ages been given to children.
2. Knowledge of artificial foods generally used, with their defects—physical and chemical.
3. A recognition of the likes and dislikes of the child with regard to natural foods.
4. To introduce only one new foodstuff into the dietary of a child at once, and make sure that this agrees with the child before making further alteration.
5. To increase the intervals between meals according to the length of time required for digestion in the stomach. This attention to be regulated by previous knowledge of the appetite of the child and needs of civilisation, i.e., regularity of meals, ultimately three meals daily.

Prolongation of Nitrous Oxide for Dental Operations by Paterson's Method. Percy C. Kirkpatrick, M.D.—In this paper, the author describes a modified Paterson's apparatus for the administration of N_2O through the nose in operations where a longer period than that obtained by the usual method is desired.

Instead of, as in Paterson's apparatus, having a nose pad with N_2O supply tubes and a mouth cover with an expiratory valve, he combines the two by fixing an expiratory valve to the nose-piece, doing away with the mouth cover altogether. This valve is capable of being closed by a cap, so that, when the mouth is opened to commence work, the increased pressure necessary to limit the supply of air by the open mouth may be used.

The author contends that, with the original apparatus, the necessary breathing in through the nose and out through the mouth for some patients was a difficult matter, and that his modification makes the initial stage much more comfortable for the patient, as to and fro nasal breathing is established at once.

Another gain is that the widely opened mouth is not necessary in the initial stage, a point greatly appreciated by most patients. If, however, any difficulty in inserting the gag be anticipated, a small mouth prop may be used.

Dealing with after-effects, he mentions that when there is much cyanosis, headache and depression are met with, but states that such cyanosis is not a necessary result of the method, and should be avoided as much as possible by stopping the administration for one or two respirations. While mentioning these after-effects, he says they are the exception and not the rule.

His longest administration was for seventeen minutes, during fifteen of which there was a perfectly quiet anæsthesia.

From an analysis of cases, he finds the amount of gas used amounts to from 3 to 4 galls. per minute.

Books, Pamphlets, &c., Received.

Practical Physiology, by A. P. Beddard, M.A., M.D.; Leonard Hill, M.B., F.R.S.; J. S. Edkins, M.A., M.D.; J. J. R. Macleod, M.B.; and M. S. Pembrey, M.A., M.D. Illustrated by numerous Diagrams and Tracings. London: Edward Arnold. 1902. (15s.)

A Text-Book of Surgical Principles and Surgical Diseases of the Face, Mouth, and Jaws for Dental Students, by H. Horace Grant, A.M., M.D. Illustrated. London: W. B. Saunders & Co. 1902.

The Elements of Bacteriological Technique: A Laboratory Guide for the Medical, Dental, and Technical Student, by J. W. H. Eyre, M.D., M.S., F.R.S. Edin. With 170 Illustrations. London: W. B. Saunders & Co. 1902.

The International Text-Book of Surgery, by British and American Authors. Edited by A. Pearce Gould, M.S., F.R.C.S., and J. Collins Warren, M.D., LL.D. Vol. II: Regional Surgery. With 471 Illustrations in the Text and 8 Full-page Plates in Colours. London: W. B. Saunders & Co. 1902. (21s. net.)

Diseases of the Pancreas and their Surgical Treatment, by A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.S. Lond., F.R.C.S. Illustrated. London: W. B. Saunders & Co. 1902.

- Anæsthetics: A Practical Handbook**, by J. Blumfeld, M.D. Cantab. London: Baillière, Tindall & Cox. 1902. (2s. 6d. net.)
- La Beauté de la Femme**, par Le Dr. C.-H. Stratz. Traduit de l'Allemand par Robert Waltz. Ouvrage orné de 180 Illustrations. Paris: Gaultier Magnier et Cie. 1902. (20 fr.)
- The Pharmacological Action and Therapeutic Uses of the Nitrates and Allied Compounds**, including The Croonian Lectures for 1893, by the late Daniel John Leech, M.D. Lond., D.Sc. Vict., F.R.C.P. Edited by R. B. Wild, M.D. Lond., M.Sc. Vict., M.R.C.P. Manchester: Sherratt & Hughes. 1902. (10s. 6d.)
- The Transactions of the Edinburgh Obstetrical Society.** Vol. XXVII. Session 1901-1902. Edinburgh: Oliver & Boyd. 1902.
- The Care of the Skin and Hair**, containing suggestions as to Diet, Clothing, Bathing, and Cosmetics, by James Startin, M.R.C.S. Eng. Bristol: John Wright & Co. 1902. (2s. 6d. net.)
- A Treatise on Massage**, its History, Mode of Application and Effects, Indications and Contra-indications, by Douglas Graham, M.D. Third Edition. Revised, Enlarged, and Illustrated. Philadelphia and London: J. B. Lippincott Co. 1902. (4 dols.)
- A Handbook of the Open-Air Treatment and Life in an Open-Air Sanatorium** (Second Edition, Enlarged, Ninth Thousand), by Dr. Charles Reinhardt and Dr. David Thomson. Profusely Illustrated. London: John Bale, Sons & Danielsson, Ltd. 1902. (1s.)
- Studies from Institute for Medical Research, Federated Malay States.** No. 1—Vol. I. The Malarial Fevers of British Malaya, by Hamilton Wright, M.D. (M'Gill). London: J. & A. Churchill. 1902. (3s. net.)
- Pankreas-Pathologie** von Dr. med. H. Truhart. 1. Theil: Multiple Abdominale Fettgewebsnekrose. Wiesbaden: Verlag von J. F. Bergmann. 1902. (12s.)
- Pathologische Anatomie und Krebsforschung**, ein Wort zur Verständigung, von Professor Dr. O. Lubarsch. Wiesbaden: Verlag von J. F. Bergmann. 1902. (1s. 6d.)
- Manual of Bacteriology**, by Robert Muir, M.A., M.D., F.R.C.P. Edin., and James Ritchie, M.A., M.D., B.Sc. Third Edition, with 150 Illustrations. Edinburgh and London: Young J. Pentland. 1902.
- Year-Book of the Scientific and Learned Societies of Great Britain and Ireland.** Nineteenth Annual Issue. London: Charles Griffin & Co. 1902. (7s. 6d.)
- The Selection of Consumptive Cases for Sanatorium Treatment**, by T. N. Kelynnack, M.D. London: The Scientific Press, Ltd. 1902. (6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 22ND NOVEMBER, 1902.**

	WEEK ENDING			
	Nov. 1.	Nov. 8.	Nov. 15.	Nov. 22.
Mean temperature, . . .	50·3° *	49·5°	48·7°	38·3° †
Mean range of temperature between day and night, . .	17·2° *	13·0°	9·2°	12·8° †
Number of days on which rain fell,	7	4	7	...
Amount of rainfall, . . ins.	0·44	0·13	0·82	...
Deaths registered, . . .	295	288	269	232
Death-rates,	19·18	19·3	18·0	15·6
Zymotic death-rates, . . .	1·5	1·7	1·2	1·5
Pulmonary death-rates, . .	5·8	7·6	6·7	5·0
DEATHS—				
Under 1 year,	84	92	69	62
60 years and upwards, . .	47	37	60	42
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	4	..	...	...
Scarlet fever,	2	1	...	3
Diphtheria,	4	1	2	1
Whooping-cough,	8	9	1	6
Fever,	1	4	3	1
Diarrhœa,	4	11	12	11
Croup and laryngitis, . .	...	3	3	1
Bronchitis, pneumonia, and pleurisy,	77	91	82	55
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	16	13	15	20
Erysipelas,	38	21	15	23
Scarlet fever,	61	64	51	48
Typhus fever,	3	4	4	2
Enteric fever,	11	10	11	9
Continued fever,	1	...	...	...
Puerperal fever, . . . .	...	1	2	2
Measles, ‡	48	30	38	56

* No records on 28th & 30th Oct. † No records on 16th & 17th Nov. ‡ Measles not notifiable.

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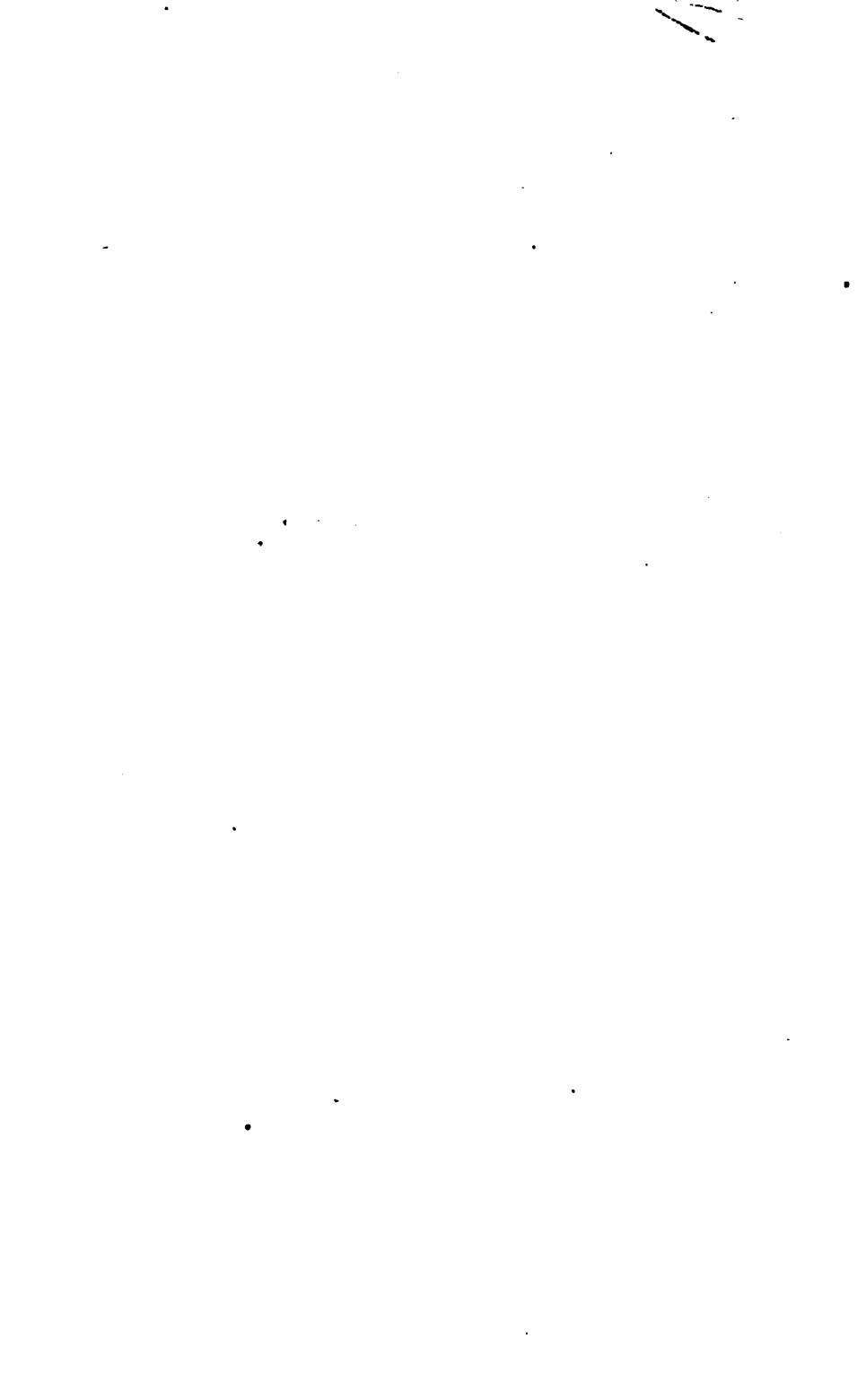
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